Better & Safer INTERNET EXPLORER Alternatives

BONUS COVER FOLD-OUT Get More From Google

PC WORLD

DO IT ALL! PRINT-SCAN-FAX DEVICES FROM $119

BEST BUYS: Fast Desktops, Cool Cameras & Much More

SUPER UTILITIES: 24 Hot Picks

OCTOBER 2004 • TECHNOLOGY ADVICE YOU CAN TRUST® • AOL KEYWORD: PCWORLD • WWW.PCWORLD.COM

SPECIAL ISSUE >>> 101 NEW TIPS

HOW TO FIX

THE MOST ANNOYING THINGS ABOUT PCs, WINDOWS & THE WEB

>>> OUR BEST GUIDE EVER!

$6.99 USA • $7.99 CANADA • Printed in USA

10>

0 74470 37771 9

DISPLAY UNTIL OCTOBER 18, 2004

CLIP & SAVE BONUS

PC WORLD

Instant Reference Guide: 21 Google Shortcuts, Tips, and Tricks

Make quick searches even quicker with the right word. Use the search bar as a calculator. Track packages. Check flight status. Go shopping. Here's how.

Shortcuts

IF YOU KNOW the right syntax, you can home in on a short list of targeted search results. Here are some of the key search phrases and how to use them.

A PLUS FOR + AND –

TO MAKE GOOGLE include stop words (common words that it would otherwise ignore, such as *the*), you can use a + (plus sign). To make Google exclude stop words, replace the + with a – (minus sign). (With all syntax words, make sure there is no space after either sign or after a colon.) Example: To find keyboard shortcuts in Microsoft Word, type **keyboard+shortcut+word**. Replace *word* with any other application name to get keyboard shortcuts for it, such as OE (for Outlook Express), Quicken, and Acrobat.

YOU ARE INTITLED

INTITLE: Tells Google to search for just words found in Web page titles. Example: **intitle:dark chocolate**

CAUGHT IN THE WEB

INURL: Google looks only in URLs of Web pages. Example: **inurl:baseball**

FILE FORMATS RULE

FILETYPE: There are a number of file types searched by Google in addition to standard HTML-formatted pages. Example: Typing **filetype:doc dark chocolate** brings back only Word documents on the subject of dark chocolate. Similarly for other file types, only files created with the corresponding program are returned. Examples:

- Adobe Acrobat (**pdf**)
- Lotus 1-2-3 (**wk1**, **wk2**, and so on)
- Microsoft Excel (**xls**)
- Microsoft PowerPoint (**ppt**)
- Rich Text Format (**rtf**)
- Shockwave Flash (**swf**)
- Text (**ans**, **txt**)

TEXT SUPPORT

INTEXT: Google searches only in the body text of Web pages—not in links, URLs, or titles. Example: **intext:pcworld** or **intext:pcworld.com**

CITE THE SITE

SITE: Use this bit of syntax when you want to limit Google's search to a particular site. Example: **site:pcworld.com Microsoft mouse** would offer only references to Microsoft mice that are on *PC World*'s Web site.

Continued on the other side.

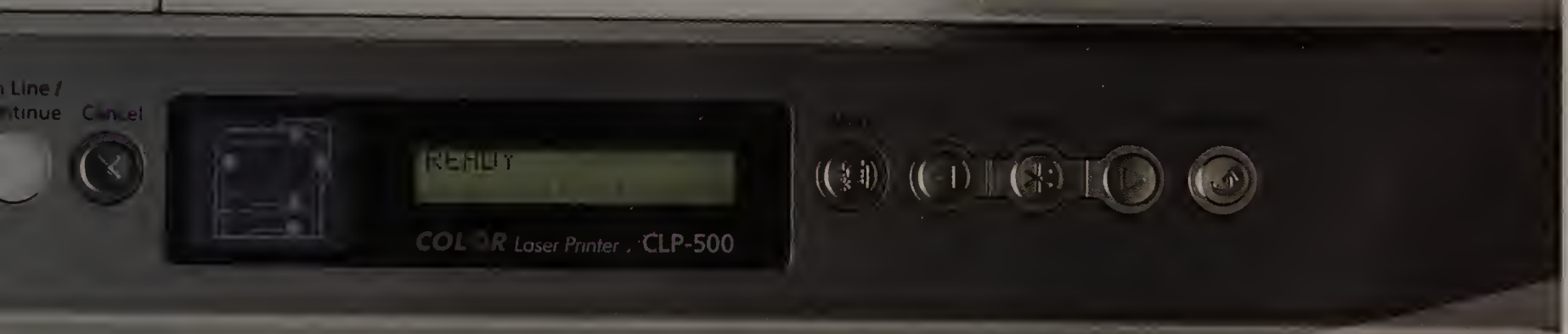
FIND THE DEALS

How to Search in Froogle

FROOGLE, GOOGLE'S shopping site, targets the item or stores you are looking for more precisely than if you performed the same search in the Google search bar. But you can still get a large number of hits if an item is sold on a legion of Web sites. To narrow your search even more in Froogle, you can search by a specific store. Example: **store:macys** returns with everything the store sells.

Add an item before, and the search is more specific: **chocolate store:macys**

Once you get the results, Froogle lets you narrow your query by price range, topic area, and more in a separate pane on the left side of the results page.



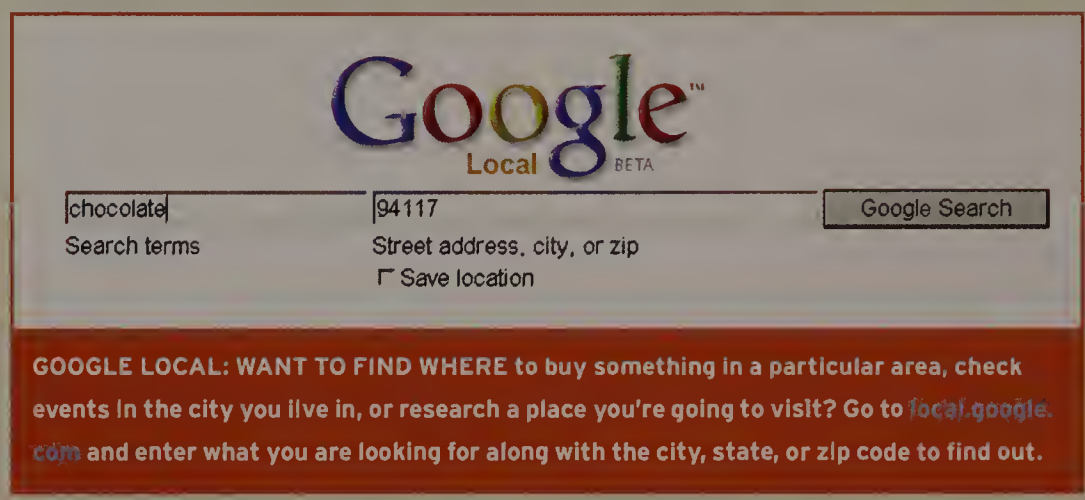
SAMSUNG

Samsung's new CLP-500 Series Color Laser Printers.

It's your image. And our reputation. So at Samsung Electronics, we engineer our color printers around the productivity needs of business. We have hundreds of engineers whose entire focus is exploring new color technologies. And with ownership of the entire manufacturing, technology, design and development process, we can offer new solutions faster and more affordably than other printer providers. The results can be seen in our new CLP-550 color laser, which delivers photo-quality on plain paper, handles two-sided tasks with ease, and comes with print performance and paper capacities never before seen in its class. It's one of many solutions to come from Samsung Electronics, a company taking color and what it can do for you, to a whole new level.

Think. Print. Lead.

SAMSUNG



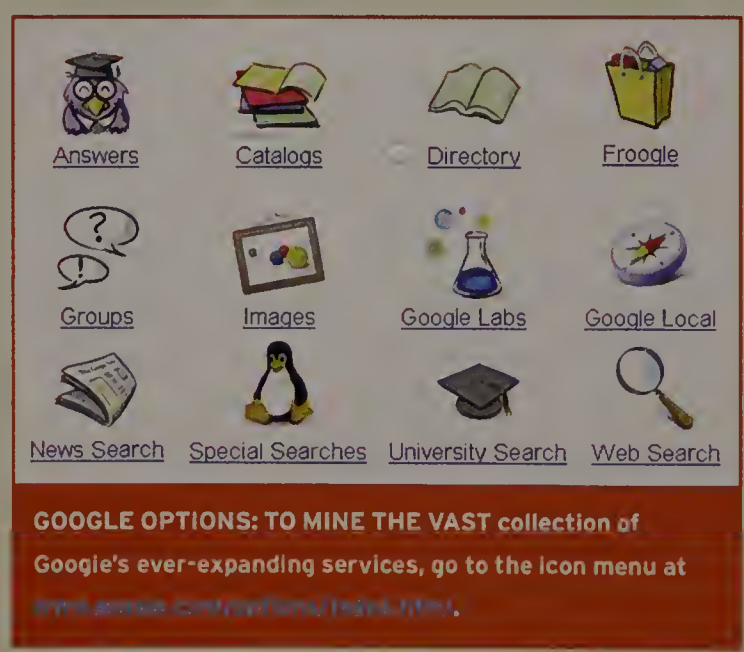
GOOGLE LOCAL: WANT TO FIND WHERE to buy something in a particular area, check events in the city you live in, or research a place you're going to visit? Go to local.google.com and enter what you are looking for along with the city, state, or zip code to find out.

Tips and Tricks

GOOGLE IS MORE than a search engine. It is a dictionary, a calculator, an almanac, a phone book, and much more. Here's how to harness its other powers.

TOP 10 WORDS

GOOGLE LIMITS SEARCHES to only the first ten words entered, so keep your search phrases as short as possible.



GOOGLE OPTIONS: TO MINE THE VAST collection of Google's ever-expanding services, go to the icon menu at [illegible].

Google searches on words in the order they appear, so **book paper** would get you a different result than **paper book**.

DEFINITE DEFINITIONS

DEFINE: Find definitions to words by typing **define:*word***. Only the definition is returned. If you want sites based on the word as well, drop the colon. Example: **define *word***

BUILT-IN CALCULATOR

USING THE GOOGLE calculator is as easy as 2+2. Just enter the numbers you'd like to calculate, without the equal sign. Example: **2+2** returns with 2+2=4.

For multiplication, use an asterisk (*); for division, use a forward slash (/).

You can also use Google's calculator to query higher-level mathematics. Go to www.google.com/help/calculator.html for directions.

MAPS IN A SECOND

TYPE **map *location*** (where *location* is a city and/or state) for your choice of maps. Or do a more exacting search by entering a U.S. street address, city, state, and/or zip code. (For a region map, enter a phone area code.) Example: **123 main street san francisco ca**

INSTANT STOCK QUOTES

ENTER A TICKER symbol for a company or mutual fund on the New York Stock Exchange, Nasdaq, or American Stock Exchange for a current quote.

THE BIG PHONE BOOK

ENTER AN INDIVIDUAL residential phone number (312-555-1212) to get a listed address (and map), or enter a first name (or initial), last name, and city to get the number, if listed. You can also zero in by adding the area code or zip code as well. Don't have an address? List the last name and a zip code or city and state to get a search result.

GOOGLE'S GOT YOUR NUMBER

PACKAGE TRACKING: Enter your tracking number from Federal Express, United Parcel Service, or the United States Postal Service.

UNIVERSAL PRODUCT CODES: Enter the UPC number to get information on the product and its maker.

FLIGHT NUMBERS: Enter the airline name and flight number for status. Example: **United airlines 150** or **usair 150** ■

DIG DEEPER

Google Hack and Guides

USING THE GOOGLE programming code (API), a number of aficionados have come up with Google applications. Check out Google News Map and Google Word Color at Douwe Osinga's blog (find.pcworld.com/43858).

A cornucopia of Google tips is offered at O'Reilly (find.pcworld.com/43856), the site of the publisher of a trio of Google books: *Google Hacks*, *Google: The Missing Manual*, and *Google Pocket Guide*.

SHORT SITED

How Lucky Can You Get?

THE "I'M FEELING LUCKY" button next to the "Google Search" button

I'm Feeling Lucky

takes you directly to the first Web page that would be listed on a regular Google search results page. It is best used as a shortcut to a site that will clearly be the first result.

It's your image. Do more with it.

NO NOIS

Visit www.samsungusa.com/printer or call 1-800-SAMSUNG

Available at: BEST BUY COMPUSA Fry's Office DEPOT

©2004 Samsung Electronics America, Inc. Samsung is a registered mark of Samsung Electronics Corp., Ltd. NO•NOIS is a trademark of Samsung Electronics Corp., Ltd.
*Based on results of printers independently tested by NSTL. Full report available. **Visit www.samsungusa.com for complete service program details. Color output simulated.

10% off select customized notebooks.

Order direct from Toshiba and get a 10% instant rebate when you order one of these customized notebooks thru 10/15/04.[1]

Satellite® A60

Advanced engineering you can afford.

Intel Pentium® 4 Processor[2] with HT Technology or
Intel® Celeron® D Processor[2]
Microsoft® Windows® XP Professional
256MB, 512MB or 768MB DDR SDRAM
30GB, 40GB or 60GB hard drive[3]
DVD-ROM/CD-RW or SuperMulti optical drive
15" diagonal XGA active-matrix TFT display[4]
ATI® MOBILITY™ RADEON™ 7000 IGP with 64MB shared video memory
Integrated Wi-Fi® (802.11b/g or 802.11a/b/g)[5]
10/100 Ethernet and V.92/56K modem[6]
Limited warranty:[7] 1-year parts and labor, 1-year battery
Three months AOL membership[8]

Satellite® A70

See more, do more with a wide screen.

Mobile Intel® Pentium 4 Processor[2] supporting Hyper-Threading Technology or
Intel® Celeron® D Processor[2]
Microsoft® Windows® XP Professional
512MB, 768MB, 1,024MB or 1,536MB DDR SDRAM
40GB, 60GB or 80GB hard drive[3]
DVD-ROM/CD-RW or SuperMulti optical drive
15.4" diagonal WXGA TFT display[4]
ATI® MOBILITY™ RADEON™ 9000 IGP integrated graphics chipset with 64MB shared video memory
Integrated Wi-Fi (802.11b/g or 802.11a/b/g),[5]
10/100 Ethernet and V.92/56K modem[6]
Limited warranty:[7] 1-year parts and labor, 1-year battery
Three months AOL membership[8]

Tecra® A2

Performance and adaptability for business.

Intel Centrino™ Mobile Technology or
Intel Celeron M Processor[2]
Microsoft® Windows® XP Professional
256MB, 512MB or 1,024MB DDR SDRAM
30GB, 40GB, 60GB or 80GB hard drive[3]
DVD-ROM, DVD-ROM/CD-RW or SuperMulti optical drive
15" diagonal XGA or SXGA+ TFT display[4]
Intel® Extreme Graphics 2 with 64MB shared dynamic video memory
Integrated Wi-Fi (802.11b/g or 802.11a/b/g),[5]
10/100 Ethernet and V.92/56K modem[6]
Limited warranty:[7] 3-year parts and labor, 1-year battery

Tecra® M2

The business workhorse engineered for longevity.

Intel Centrino™ Mobile Technology
Microsoft Windows XP Professional
256MB, 512MB, 1,024MB or 2,048MB DDR SDRAM
40GB, 60GB or 80GB hard drive[3]
DVD-ROM, DVD-ROM/CD-RW or SuperMulti optical drive
14.1" diagonal XGA or SXGA+ TFT display[4]
NVIDIA GeForce™ FX Go 5200 with up to 64MB dedicated video memory
Integrated Wi-Fi (802.11b/g or 802.11a/b/g),[5]
10/100 Ethernet and V.92/56K modem[6]
Special bundled performance package options with 64MB video memory, Gigabit Ethernet, Firewire port and *Bluetooth* wireless technology
Limited warranty:[7] 3-year parts and labor, 1-year battery

Included with every Toshiba notebook:

Integrated wireless • Proprietary ConfigFree™ networking software • FREE Microsoft® Office OneNote™ 2003 (a $99 value) • Quick-return UPS repair service

Starting at ~~1,099~~
$989.10
after 10% instant rebate.[1]

Jump Code: JABE-A60S166

Popular Accessories:
Toshiba 12-Cell High-Capacity Li-Ion Battery Pack $169
Toshiba Nylon Carrying Case $49
2nd/3rd Year Warranty Extension $1[illegible]

Starting at ~~1,249~~
$1,124.10
after 10% instant rebate.[1]

Jump Code: JABE-A70S256

Popular Accessories:
Toshiba 12-Cell High-Capacity Li-Ion Battery Pack $169
Toshiba Leather Carrying Case $99
2nd/3rd Year Warranty Extension $149

Starting at ~~1,299~~
$1,169.10
after 10% instant rebate.[1]

Jump Code: JABE-A2S336

Popular Accessories:
Toshiba 12-Cell High-Capacity Li-Ion Battery Pack $169
$50 off Advanced Port Replicator III $149 (regularly $199)
3-Year SystemGuard® Protection $159

Starting at ~~1,499~~
$1,349.10
after 10% instant rebate.[1]

Jump Code: JABE-M2S630

Popular Accessories:
Toshiba 12-Cell High-Capacity Li-Ion Battery Pack $169
$50 off Advanced Port Replicator III $149 (regularly $199)
3-Year SystemGuard® Protection $159

1. 10% instant rebate on Customized Systems offer - only [illegible] select Toshiba notebooks that offer customization (build-to-order) options. Visit www.toshibadirect.com/pcworld1004 or call 800-805-3163 for eligible products. Configuring (customization) of your system takes an additional 5 to 10 working days. [illegible] Processing Unit ("CPU") Performance Disclaimer: CPU performance [illegible] product may vary from specifications under the following conditions: a. use of certain external peripheral products; b. use of battery power instead of AC power; c. use of certain multimedia, computer generated graphics or video applications; d. use [illegible] standard telephone lines or low-speed network connections; e. use [illegible] software, such as high-end computer-aided design applications; f. use of several applications or functionalities simultaneously; g. use of computer in areas with low air pressure (high altitude >1,000 meters or >3,250 feet above sea level); h. use of [illegible] at temperatures outside the range of 5°C to 30°C (41°F to 86°F) or >25°C (77°F) [illegible] altitude (all temperature references are approximate and may vary depending on the specific computer model - please visit the Toshiba website at www.pcsupport.toshiba.com for details). CPU performance may also vary from specifications due to design configurations. Under some conditions, your computer product may automatically [illegible] down. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only [illegible] recommended conditions. Contact Toshiba Technical Service and Support for more information. 3. 1 Gigabyte (GB) means 1000 x 1000 x 1000 = 1,000,000,000 bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB = 1,024 x 1,024 x 1,024 = 1,073,741,824 bytes. [illegible] may show less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary. 4. Small bright dots may appear on your TFT [illegible] on your PC. Your display contains an extremely large number of thin-film transistors (TFT) and is manufactured using high-precision technology. Any small bright dots that may appear on your display are an intrinsic characteristic of the TFT manufacturing technology. Over a period of time, and depending on the usage of the computer, the brightness of the LCD Screen will deteriorate. This is an intrinsic characteristic of LCD technology. 5. Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points is limited. The transmission speed over the wireless LAN and the [illegible] under which wireless LAN can reach may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations. The actual transmission speed will be lower than the theoretical maximum speed. 6. Due to FCC limitations, speeds of 56Kbps are the maximum permissible transmission rates during download. Actual data transmission speeds will vary depending on line conditions. 7. Limited warranty terms are available at www.warranty.toshiba.com. 8. Three months of AOL membership included with the purchase of a Toshiba Satellite PC. Availability may be limited, especially during [illegible] TO AVOID BEING CHARGED A MONTHLY MEMBERSHIP FEE, SIMPLY CANCEL BEFORE THREE MONTH PROMOTIONAL PERIOD ENDS. Premium services carry surcharges, and communication surcharges may apply, including

Tecra® M2

Budget conscious **by design.**

TOSHIBA

intel inside centrino™ MOBILE TECHNOLOGY

Toshiba recommends Microsoft® Windows® XP.

Buy direct from Toshiba and take advantage of these limited-time offers thru 10/15/04. For complete offer details visit toshibadirect.com/pcworld1004.

Free ground shipping[9]
Receive free ground shipping on all notebooks $999 or more when you order by phone or online using offer code MABE.

0% financing[10]
0% lease with 0% down and no payments for 30 days on qualified orders.

FREE 30-day trial[11] of MyConnect™
MyConnect™ enables mobile notebook users with remote Internet access through Wi-Fi®, wired Ethernet and dial-up networks at over 20,000 access points in the U.S., with just one service.

Go to toshibamyconnect.com/signup and enter offer code 3PCW2 to join today. Offer valid thru 10/31/04.

Special accessory offers
Visit toshibadirect.com for special pricing on select notebook accessories.

Order direct today!
Call 800-805-3163

or shop online at
toshibadirect.com/pcworld1004

Alaska, even during promotional period. Members may incur telephone charges on their phone bill, depending on their location and calling plan, even during promotional period. Available to new AOL members in the United States, age 18 or older; a major credit card or checking account is required. 9. Free ground shipping on new notebook orders of $999 or more via toshibadirect.com or by calling 800-805-3163. Enter code MABE during online checkout or mention code MABE when placing orders via phone. Taxes still apply. Offer valid from August 24, 2004 through October 15, 2004. 10. 30-month lease offer with fair market value end-of-term purchase option available through Toshiba America Information Systems, Inc. to qualified commercial business customers only. Each lease subject to credit approval, acceptable documentation, 10% soft cost limit and order of Toshiba computer products of $1,500 up to $100,000 (exclusive of taxes, fees and shipping). Rates quoted do not include taxes or shipping. Offer available in the United States only, valid only until October 15, 2004 and may be withdrawn or changed at any time without notice or obligation. Other terms and conditions apply. For full description of terms and conditions call 1-800-207-6362 or go to www.octoberzerolease.toshiba.com. 11. Valid in the U.S. only! You must cancel your Access Plan before the end of the trial period to avoid being charged the $39.95 monthly Access Service fee for the initial 30 day commitment period. Monthly automatic renewal feature after end of commitment period. Available to new members in the U.S., age 18 or older, and a major credit card for billing is required. Offer is for unlimited dial-up, wired broadband, or Wi-Fi remote access connection time in the 50 United States and the District of Columbia within the MyConnect service area for 30 day continuous service periods. Use of optional 800 telephone number dial-up usage will incur additional fees even during the trial period. Other terms and conditions apply. Offer expires October 31, 2004. Information, prices and availability subject to change without notice.

Satellite, Tecra and SystemGuard are registered trademarks and ConfigFree and MyConnect are trademarks of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel, Intel Inside, Intel Inside logo, Centrino, Intel Centrino logo, Celeron and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks and OneNote is a trademark of Microsoft Corporation in the United States and/or other countries. Wi-Fi is a registered certification mark of the Wi-Fi Alliance. The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Toshiba is under license. NVIDIA and GeForce are registered trademarks or trademarks of NVIDIA Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners. Product specifications, configurations, prices, system/component/options availability are all subject to change without notice. Rebates may not be combined, and are not valid in conjunction with other Toshiba offers or rebates for the same products, unless specified otherwise by Toshiba. Toshiba reserves the right to modify or withdraw these promotions at any time. Reseller/Retailer pricing may vary. © 2004 Toshiba America Information Systems, Inc. All rights reserved.

CDW®

We have more brands, so you have more choices.

With a wide variety of leading brands, fast shipping and knowledgeable account managers, at CDW you'll find people who are dedicated to getting you the right technology for your needs–when you need it.

hp invent

Starting at
$999
CDW 514774

Additional hard drives sold separately

hp ProLiant ML330

- Integrated ATA RAID standard on ATA models for the lowest cost data protection
- Support for up to two Intel® Xeon® processors for faster processor performance
- Pre-failure warranty covering processors, memory and hard drives

Iomega® REV™ 35GB native/90GB compressed USB 2.0 External Drive

- Back up and recover files up to 8 times faster than DDS-4 tape
- Password protects confidential data and encrypts your backups
- No cleaning or maintenance required; appears as a standard drive letter

iomega

$379.77
CDW 569596

Customer understands that CDW is not the manufacturer of the products purchased by customer hereunder and the only warranties offered are those of the manufacturer, not CDW. All pricing is subject to change. CDW reserves the right to make adjustments to pricing, products and service offerings for reasons including, but not limited to, changing market conditions, product discontinuation, product unavailability, manufacturer price changes and errors in

Business Objects Crystal Reports v10 Professional Edition

- Easily access and format your data into dynamic information
- Build end user interactivity into your reports
- Effectively manage reports

BUSINESS OBJECTS

$450.77

CDW 573435

U.S.Robotics

$149

CDW 491047

U.S. Robotics 802.11g Wireless Turbo Multi-Function Access Point

- Ensures that each wireless device on your network connects independently at that device's fastest speed possible–100Mbps and 54Mbps 802.11g, 22Mbps and 11Mbps 802.11b
- Multiple networking modes–Access Point, Client Mode, Point to Point Bridge, Multipoint Bridge and Repeater Function
- Superior security options–64/128/256-bit WEP encryption, MAC address authentication, 802.1x and WPA (Wi-Fi™ protected Access) offers multiple security options to meet your particular needs

---

NEC MultiSync® 2060NX

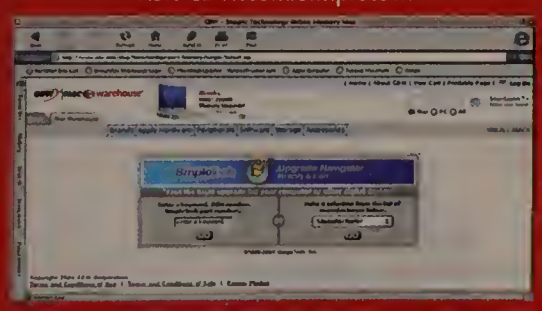
- Native resolution: 1600 x 1200
- Contrast ratio: 600:1
- Brightness: 250 nits
- 3-year limited parts, labor and backlight warranty

NEC/MITSUBISHI
NEC-MITSUBISHI ELECTRONICS DISPLAY
SEE MORE.™

$1049.99

CDW 627388

Visit CDW.com/simpletech



Use SimpleTech's Upgraded Navigator to find out which memory module your system needs.

SimpleTech Memory Upgrades

- Guaranteed 100% compatible
- Meets or exceeds OEM requirements
- Premium components
- Lifetime warranty

SimpleTech

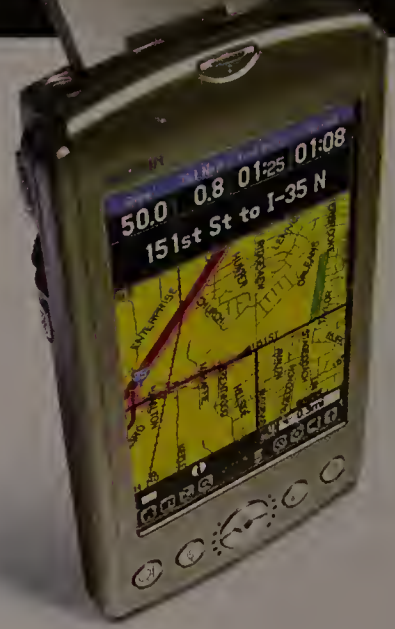
THE RIGHT TECHNOLOGY. RIGHT AWAY.™ ▶ **CDW.com • 800.399.4CDW**

In Canada call 800.387.2173 • CDW.ca

advertisements. All orders are subject to product availability. Therefore, CDW cannot guarantee that it will be able to fulfill customer's orders. The terms and conditions of sale are limited to those contained herein and on CDW's Web Site at CDW.com. Notice of objection to and rejection of any additional or different terms in any form delivered by customer is hereby given. © 2004 CDW Corporation

PCM/PCW/CS 10/04

POWERED



iQue. A car navigation system cleverly disguised as a PDA.

A busy schedule is one thing. Keeping up with that schedule is another. Thank goodness for Garmin iQue. The iQue combines a full-featured PDA and a timesaving GPS to make sense of the who, what, when, where and how of your busy life. The contacts list, memo pad and calendar features of the Palm-powered PDA are integrated with GPS-enabled Que technology so you can enjoy detailed electronic maps, "find" features, automatic routing, voice prompts and turn-by-turn directions to your appointment. It reminds you of activities and guides you there on time. Navigation meets organization. iQue, the smart way to navigate your day.

Go to **www.garmin.com** for more information.

A "find" feature lets you search for and drive to areas of interest

The iQue 3200 or iQue 3600 with MP3 and voice recorder

Available through: CITY COMPUSA RadioShack. OfficeMax

GARMIN.

NASDAQ **GRMN**

The Annoyances Issue

PC WORLD

OCTOBER 2004

VOLUME 22 ◆ NUMBER 10

AOL KEYWORD: PCWORLD

WWW.PCWORLD.COM

FEATURES

HOW TO FIX ANNOYANCES

76 **Enough Already!**
Bedeviled by high-tech hassles? Steve Bass comes to the rescue.

ANNOYANCE CREATORS & FIGHTERS

88 **Halls of Shame & Fame**
We finger the worst perpetrators and honor the best citizens.

SIMPLIFY YOUR PC

90 **Keep It Simple**
When it comes to your computer, less (clutter) is more (productivity).

QUICK & EASY GUIDES

103 **All Gain, No Pain**
Complete six essential PC chores in just 10 to 25 minutes each.

CORRECTIVE TOOLS

123 **Annoyance Busters**
Achieve system serenity with two dozen free and low-cost utilities.

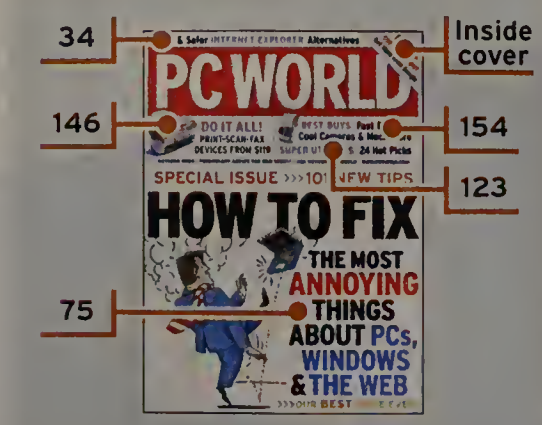
RATE YOURSELF

130 **R U Annoying?**
Discover your pariah/mensch quotient by taking our revelatory quiz.

75 **Fixes for the Biggest Annoyances**
You're at the boiling point. Windows is acting up. Peripherals refuse to cooperate. And online, nothing seems to be working right. Before you give your PC the boot—literally—read this special issue. We've filled it with a host of tricks and tools for eradicating the worst computing irritations. With our guidance, you'll be able to breathe easier—and get back to work.

Cover Illustration by Edwin Fotheringham

ON THE COVER



When you focus on excellence, everything becomes very clear.

BenQ offers a complete line of LCD displays from 15" to 23".

BenQ LCD Monitors—blending world-class performance with lifelike reproduction.
Before you spend countless hours in front of a monitor, consider what's behind it. With BenQ, you'll find an industry leader whose commitment to excellence has made it the third largest display manufacturer in the world. From our stunning 23" wide-screen to the scorching 12ms refresh rate of our 17"display—every BenQ LCD is created with an obsession for detail and a passion for performance. Call 866-700-2367 or visit www.benq.com to see more.

©2004 BenQ America Corp. All rights reserved. All trademarks and registered trademarks are the property of their respective holders.

BenQ
Enjoyment Matte

TOP 100

146 **Spotlight: All-in-Ones**
Print, copy, and scan.
154 **Top 15 Desktop PCs**
156 **Top 15 Notebook PCs**
159 **Top 10 Monitors**
161 **Top 10 DVD Drives**
163 **Top 10 Digital Cameras**
165 **More Reviews**

DEPARTMENTS

23 **Up Front**
45 **Letters**
49 **Plugged In**
Fiber-optic broadband; Microsoft Marketplace.
51 **Consumer Watch**
Six online shopping pitfalls for the unwary.
55 **Home Office**
Keep current with updates and RSS feeds.
57 **Bugs and Fixes**
Windows HTML Help is in grave need of succor.
186 **Full Disclosure**
Your Windows gripes.

RESOURCES

19 **How to Contact PC World**
178 **PC World Marketplace**
184 **Advertiser Index**

TELL US WHAT YOU THINK

Visit www.pcworld.com/pcwinput and rate this issue—you could win an HP IPaq H4155 Pocket PC handheld, which currently sells for approximately $400. You'll need the subscriber number from your mailing label to take this survey online. The site explains the official rules and also how to participate in the drawing if you're not a subscriber. You can enter from September 20 through October 15, 2004.

COMING UP IN NOVEMBER

Tech Shopping Guide: We tell you where to get the best info and prices both online and offline.

Anatomy of a Worm: Follow a Windows system file as it gets created, infected, and patched.

The Total Wireless Network: How to buy, install, and use a wireless net in your home or home office.

From Vinyl to MP3: It's high time you hauled those old LPs out of storage and into the digital age.

NEWS & TRENDS

26 **Sneaky Sharing**
Peer-to-peer file sharing moves from big-name networks to smaller, harder-to-track venues.
30 **Should Your Next PC Be a Workstation?**
As workstation prices drop into desktop PC territory, new groups of users may find benefit.
32 **Tiny Drives With Big Brains**
USB flash drives get more capable and affordable, but businesses have security concerns.
34 **Is It Time to Ditch IE?**
Federal security experts suggest users consider switching browsers as one line of defense.
38 **Three Minutes With HDNet's Mark Cuban**
He reveals his vision for portable high-def TV.

NEW PRODUCTS

60 **Camera Phones**
Kyocera Koi, Nokia 7610, Sprint PCS PM-8920
62 **Financial Software**
Intuit Quicken 2005, Microsoft Money 2005
64 **Desktop PC**
HP Media Center M1050y
66 **Photo Editing Software**
Microsoft Digital Image Suite 10
68 **Gigabit Network Switches**
D-Link DGS-1008D, EGig EG8G-Z
70 **MP3 Player**
Apple IPod 40GB

See page 61 for a complete list of new products reviewed.

NEXT GEAR

139 **Video to DVD, Sans PC**
Three ways to convert VHS tapes directly to disc.
142 **Projector and Radio Receiver**
InFocus ScreenPlay 4805; Griffin RadioShark
144 **Gadget Freak**
A Wi-Fi network and a wayward rooster don't mix.

HERE'S HOW

166 **Internet Tips**
Tweak Windows XP SP2's security settings.
170 **Windows Tips**
Toggle your screen saver; no-fuss file paths.
172 **Hardware Tips**
Conserve and maximize notebook battery power.
174 **Security Tips**
Barricade your computer against external threats.
176 **Answer Line**
Share a printer with PCs on your home network.

Newegg.com

http://www.newe

NETGEAR

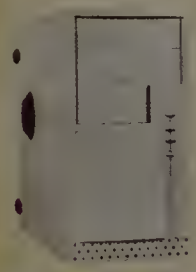
$122.99

Wireless Firewall Router & PC Card
Model# WFTB511T

Microsoft

$89.99

Wireless Optical Desktop Elite
Model# S51-00001



IN WIN

$47.49

V500 Micro ATX Mini Case
w/250 Watt Power Supply

BenQ

$99.99

16x DVD +/- RW Drive
Model# DW1610

Western Digital

$62.50

80GB Special Edition 7200RPM
IDE Hard Drive WD800JB-OEM

ABIT

$152.00

AA8-DuraMAX
i925X Chipset Motherboard
for Intel LGA775 CPU

FREE SHIPPING*
FedEx Express Saver Shipping

THIS MAGAZINE ALSO MAKES A HANDY CATALOG.

We don't print a catalog. But anything devoted to computers makes for great shopping. Even our competitors' catalogs, stores and web sites. We believe the more you know, the better we look. So shop around. Then, when you know exactly what you want, buy it at Newegg.com. Great prices. Fast shipping. And just about everything you see in this magazine, in stock.

newegg.com™

ONCE YOU KNOW, YOU NEWEGG.

an "A" rating on every merchant ranking site.

POWER TOOL

"The DocuMate 252 establishes a new standard in price/performance, image quality and ease-of-use which are three of the most important criteria in selecting a workgroup scanner."

—Susan Moyse, InfoTrends Research Group

There's a new way to look at it.

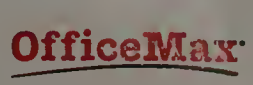
High standards. Remarkable performance. That's Xerox for you. The Xerox DocuMate™ Scanner Series is the ultimate office productivity tool for converting documents into PDF, TIFF, JPG, BMP or most other major file formats for storing and sharing, while offering the highest level of image quality and OCR accuracy.

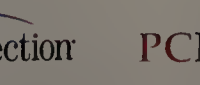
They're fast, too. Up to 50 images per minute. Kofax's VRS® software, bundled in the DocuMate 250, 252 and 520, gives you image enhancement, auto-exposure, autocropping and wide-angle deskew. And each scanner offers TWAIN and ISIS™ drivers, VRS certification and up to $800 in bundled software. Compact. Powerful. Cost-effective.

Learn more: www.xeroxscanners.com

THE DOCUMENT COMPANY
XEROX.

Available Online at:

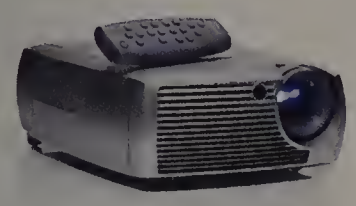




Xerox® The Document Company®, DocuMate and There's a new way to look at it are trademarks of Xerox Corporation in the United States and/or other countries and are used under license. All other trademarks are the property of their respective owners and are hereby acknowledged.

Durable DLP Projector, Multitalented MFPs, and a Phone for Photos

NO ANNOYANCES HERE: A home theater projector that uses Digital Light Processing technology, an array of inkjet and laser multifunction printers, and a cell phone that takes 1.2-megapixel photographs are among the stars of our October issue. We also take an extended look this month at free and low-cost utilities to enhance PC performance, housekeeping, and security in "Annoyance Busters" (page 123).



142 Affordable Home Theater
The well-built InFocus ScreenPlay 4805 delivers top-notch imaging capabilities and easy color adjustment at an entry-level price of $1495.

146 All-in-One Multifunction Printers
Our *Top 100* Spotlight illuminates MFPs in two flavors: inkjet (like the Canon MultiPass MP390 at left) and laser (like Brother's MFC-8840DN).

60 Photo-Friendly Cell Phone
The Kyocera Koi heads three camera phones in our *New Products* section. Comfortable and nicely designed, the Koi is nothing to carp about.

THIS MONTH'S CROP OF TOP PRODUCTS

DESKTOP PCs
154 Dell Dimension 4700 ★★★★☆
154 Dell Dimension 8400 ★★★★½
64 HP Media Center M1050y ★★★★☆
154 Polywell Mini-Box 900VX ★★★½☆
154 Velocity Micro Vision FX ★★★★☆

NOTEBOOK PCs
156 Acer Ferrari 3200 ★★★★☆
156 Dell Inspiron 9100 ★★★★☆

MULTIFUNCTION PRINTERS
148 Brother MFC-8840DN ★★★★☆
148 Canon MultiPass MP390 ★★★★½
148 Epson Stylus CX6600 ★★★½☆
148 Lexmark X422 MFP ★★★½☆

17-INCH LCD MONITORS
159 LG Electronics Flatron L1710SK ★★★½☆
159 Sharp LL-172A-B ★★★★☆
159 Sony SDM-HS74P ★★★★☆
159 ViewSonic VP171s ★★★½☆

DVD RECORDERS
139 GoVideo VR4940
139 Sharp DV-HR300U

DVD DRIVES
161 LaCie D2 DVD±RW Double Layer ★★★★☆
161 LG Electronics Super-Multi GSA-4120B ★★★½☆
161 Lite-On SOHW-1213S ★★★½☆
161 Sony DRU-540A ★★★½☆

DIGITAL CAMERA
163 Canon PowerShot S60 ★★★★☆

CAMERA PHONE
60 Kyocera Koi ★★★½☆

MP3 PLAYER
70 Apple IPod 40GB ★★★★½

DIGITAL PROJECTOR
142 InFocus ScreenPlay 4805 ★★★★☆

NETWORKABLE USB 1.1 MODULE
125 Keyspan USB Server

GIGABIT NETWORK SWITCHES
68 D-Link DGS-1008D ★★★★☆
68 EGig EG8G-Z ★★★½☆

WIRELESS NETWORKING DEVICE
128 D-Link DWL-G800AP Wireless Range Extender

CABLES AND POWER ADAPTERS
126 Zip-Linq USB cables and power adapters

DRIVE IMAGING SOFTWARE
70 Symantec Norton Ghost 9 ★★★★☆

PHOTO EDITING SOFTWARE
66 Microsoft Digital Image Suite 10 ★★★½☆

PERSONAL FINANCE SOFTWARE
62 Intuit Quicken 2005 ★★★★☆
62 Microsoft Money 2005 ★★★★☆

UTILITIES
127 Alcohol Software Alcohol 52%
127 Alcohol Software Alcohol 120%
124 Andreas Winter Scenalyzer Live
127 Jetico BCWipe
124 LitePC Technologies XPLite
128 South River Technologies WebDrive

THE HIGHEST-RANKING new products reviewed in this issue of *PC World* are listed above, together with the page number where each product is reviewed and the star rating it received. See find.pcworld.com/10860 for more about *PC World*'s Star Ratings.

Branch Office

Small Workgroup Office

Corporate Office

Road-Warrior Office

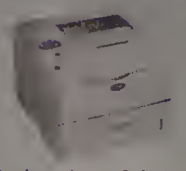
Home Office

Take cost out of your business and increase productivity. No matter where you do business.

The Brother Advantage

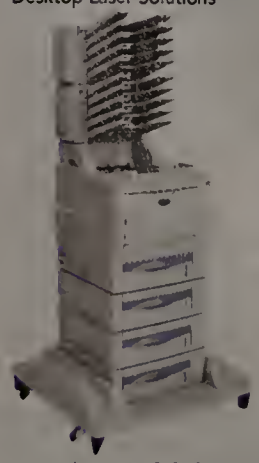
- *Comprehensive selection*
- *Increased productivity*
- *Lower acquisition costs*
- *Reduced consumable costs*
- *24/7/365 support and service*
- *Free evaluation program*

Mobile Solutions



Desktop Laser Solutions

Color Laser Solutions



Network Printer Solutions

Multi-Function Solutions

Fax Solutions

Brother Printer, Fax and Multi-Function Center® models — designed to increase productivity while decreasing overhead.

Considering that over 94% of Fortune 1000 company employees work outside corporate headquarters*, equipping them with a cost-effective solution is, to say the least, a major challenge.

That's why Brother's Commercial Division is committed to providing superior and reliable imaging solutions that increase productivity while reducing costs. This enables businesses like yours to effectively address critical organizational goals and challenges.

But it is our product reliability, coupled with a responsive nationwide support and service network, that has companies like yours putting Brother at the top of their requisition lists.

Brother's Commercial Division welcomes the opportunity to put our resources to work for you. Contact us today so we can show you how we can positively impact your bottom line while enhancing your performance.

For more information, call 1-866-455-7713.

*Purchase Influence in Larger American Businesses (*Erdos & Morgan*, 2001).

At your side.™

brother®

© 2004 Brother International Corporation, Bridgewater, NJ • Brother Industries Ltd., Nagoya, Japan

For more information visit our Web site at www.brother.com

PC WORLD

NOW ONLINE AT PCWORLD.COM

WWW.PCWORLD.COM ◆ AOL KEYWORD: PCWORLD

ONLINE FEATURES

PDA Virus Found in the Wild
find.pcworld.com/43974
Experts have been warning about them for years, and now one has finally emerged: the Brador Trojan horse gives intruders access to infected Pocket PC devices.

Hack the Vote
find.pcworld.com/43976
How reliable are e-voting machines? The debate over this question has prompted a challenge—and a cash payout for sabotaging the system.

FEATURED COLUMN

Mac Skeptic
find.pcworld.com/42090
Senior Editor Rebecca Freed casts a discerning eye on Macintosh technologies and products, and identifies what's genuinely hot and what's just hype.

E-MAIL NEWSLETTERS

Weekly Brief
Best stories of the week.
Daily Product Review
Expert reviews, sneak previews.
Steve Bass's Home Office
Get the most from your gear.
Best Buys
Award winners from our *Top 100*.

Daily Downloads
The hottest software on the Web: games, utilities, drivers, and more.

Visit find.pcworld.com/37577 for these newsletters and more. Visit find.pcworld.com/39908 for regular *PC World* columns.

PRODUCT FINDER

How it works: Powerful search tools find the products you want.
Best prices: Real-time prices drawn directly from vendors.
Merchants: Hundreds of retailers, with ratings from customers.
Services: Simplified order tracking and shipping calculations for all of your online purchases.

Go to find.pcworld.com/37580 for all Product Finder listings.

FIND-IT URLs

TO ACCESS information about any item in *PC World* with an accompanying Find-It URL, enter find.pcworld.com/*xxxxx* (where *xxxxx* is the appropriate five-digit number) into your browser's location field. You'll jump to a Web page containing the information you want.

HIGHLIGHTS

Digital World
www.digital-world.com
Our new bimonthly publication, *Digital World*, covers the new world of digital entertainment products. All newsstand copies of *PC World* include a copy of *Digital World* as well. In addition, it's available online; *PC World* subscribers can download a printable version for free. Go to dwfind.com/43834 for details.

TOP 10 DOWNLOADS

Head to find.pcworld.com/43906 to locate and download these popular files.

1. **Ad-Aware SE 1.03**
2. **Spybot Search & Destroy 1.3**
3. **Pop-Up Stopper Free 3.1.1012**
4. **ZoneAlarm 5.0.590.015**
5. **Motherboard Monitor 5.3.6**
6. **Norton AntiVirus 2004**
7. **WebWasher Classic**
8. **RegRepair 4.4.03**
9. **Browser Hijack Blaster 1.0**
10. **WinPatrol 7.0**

MOST POPULAR PRODUCTS

At press time, these were the top sellers, by category, at *PC World*'s Product Finder.

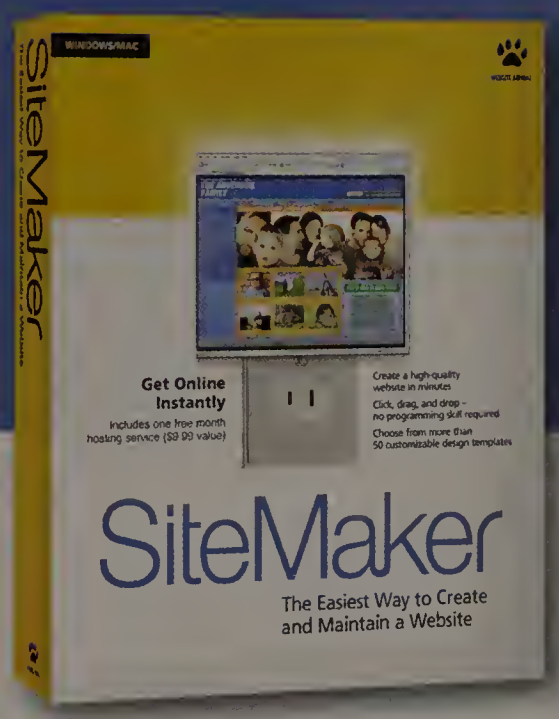
- **Digital Music Player**
  Apple IPod Mini
  find.pcworld.com/43436
- **Memory**
  Kingston 512MB PC3200 DDR DIMM
  find.pcworld.com/43936
- **Business Software**
  Intuit QuickBooks Pro 2004
  find.pcworld.com/43932
- **LCD Monitor**
  SyncMaster 193P
  find.pcworld.com/43930
- **Digital Camera**
  Canon EOS Digital Rebel EF-S SLR
  find.pcworld.com/43938

PHOTOGRAPH (MIDDLE): COURTESY OF APPLE; (BOTTOM) MARC SIMON

For a Limited Time

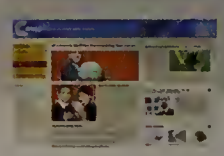
Website Animal is giving every PC World reader

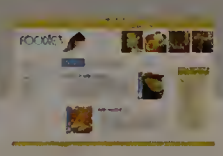
a FREE website!



Create your FREE website and win prizes in our Website Design Contest! Prize categories include: Best Overall Site, Most Unique Site, Small Biz Site, Friends and Families, and Hobbies and Leisure.
See details at www.websiteanimal.com/pcworld
Enter 8976 when prompted for your password.

Website Animal's SiteMaker is a powerful new website-building software that allows anyone who can click a mouse or tap on a keyboard to build a dazzling website in minutes. Zero programming skills required.





If you have a business, club, hobby, family or even a dream in need of a website you can create it here, for FREE.

In addition to the FREE website software (a $29.99 value), Website Animal's SiteMaker includes one month of FREE hosting. You get a FREE custom URL, a FREE library of stock photos, FREE clip art and Flash animations, and a FREE drag and drop editor that allows you to update your site from anywhere in the world via any Internet connection.

With Website Animal you can:
- Choose a web address and get online instantly
- Choose from dozens of professionally created designs
- Easily change templates, backgrounds and designs
- Edit text sizes, fonts and colors
- Add unlimited pages, sub-pages and links
- Use your personal images or choose from our photo library
- Sell your own products online
- Add flash animations, music and images
- Include "Live Chat" or Discussion Boards
- Much more!

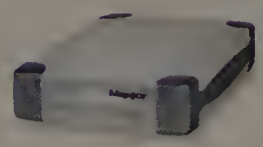
Website Animal is making this special offer to celebrate its introduction of SiteMaker and SiteMaker Pro, available at leading computer and software retailers throughout the United States.

WEBSITE DESIGN CONTEST

PRIZES INCLUDE

Dell Dimension 4600C
Great Performance, Small Design.

Kodak EasyShare DX7630
Zoom Digital Camera–6.1 MP



Maxtor External Firewire Hard Drive
Personal Storage 3000DV - 80 GB

Website Animal SiteMaker Hosting
12 months Free

Get your FREE website software and your FREE month of hosting now by visiting:
www.websiteanimal.com/pcworld
Enter 8976 when prompted for your password.

That's it! You're FREE to create your masterpiece and win some great prizes.

CLUTTER TO CASH.

"PC Selling Center helps me get more money than I expected and the process was easier than I anticipated."

Coleman Andrews - eBay User ID: calicoleman (19)

There's a gold mine in your garage (or maybe in your closet, or even on your desk). Whether trading in your current system for that hot upgrade, or just watching your old gear gather dust, you should try a great new free resource from PC World and eBay that makes selling your desktop or notebook super convenient.

We're talking fast, easy—and right from home. Simply go to eBay's new PC Selling Center at www.ebay.com/pcsellingcenter and use innovative no-cost tools designed to let you appraise your system's resale value, create a profile of your system for posting it on eBay and completely erase deleted files on your hard drive!

Need more? How about packaging and shipping services? eBay's new PC Selling Center can even connect you with a local eBay expert to help with your sale.

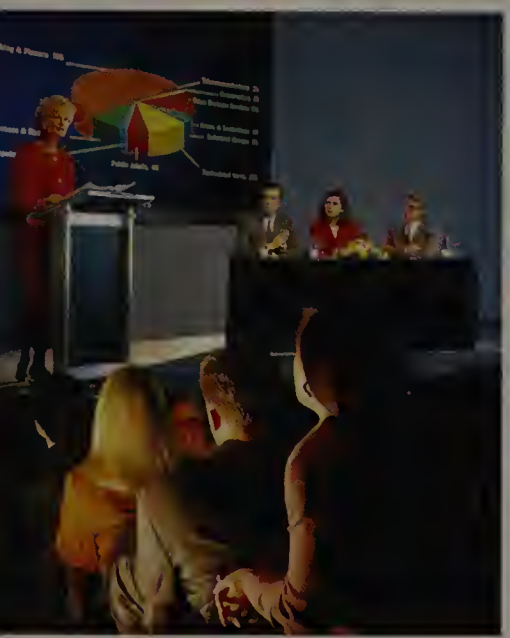
Turn your clutter into cash now. Go to:

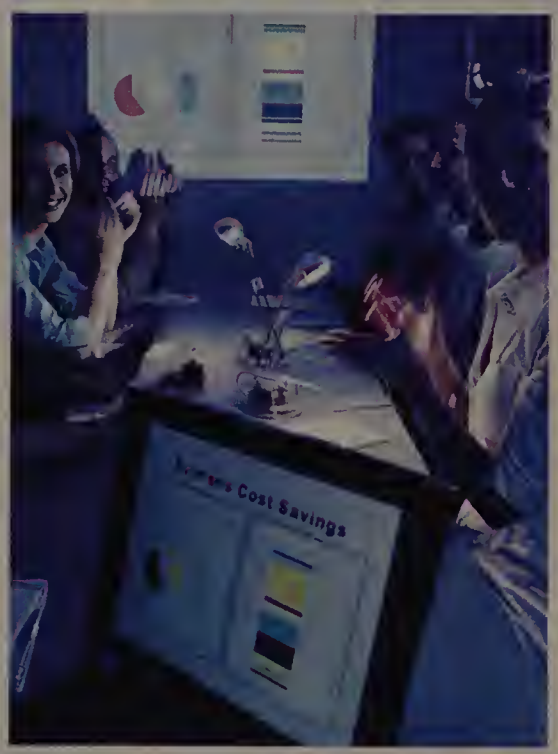
www.ebay.com/pcsellingcenter

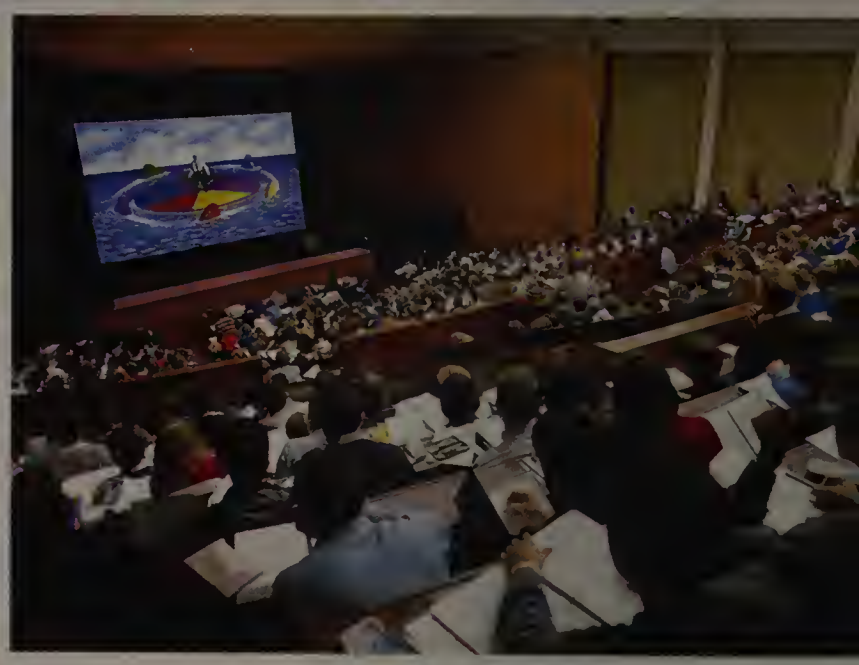
Brought to you by:

PC World, the PC World logo, eBay and the eBay logo are trademarks or registered trademarks of PC World Communications Inc. and eBay, Inc., respectively. All rights reserved. All other trademarks are the property of their respective owners.

EP759/EP758







All Work & ALL Play

Optoma's EP759 and EP758 are the anytime, anywhere, take-it-with-you or leave-it-in-place business/multimedia projectors.
Built for a wide range of applications – from auditoriums and churches to classrooms, conference rooms and living rooms – they're designed with today's demanding multimedia presentations in mind. These robust, compact, ultra bright business projectors function just as brilliantly when it comes to high definition film and video as they do with graphic presentations.

EP759/EP758
3200 lumens / 2800 lumens for powerful presentations anywhere
2000:1 contrast ratio for stunning images & crisp graphics
UXGA (1600x1200) maximum resolution and HDTV compatibility
DVI-HDCP, Component, VGA Composite, & S-Video inputs
VGA monitor loop through, USB RS232 audio in/out, mouse/laser remote
AV mute goes directly to economy mode, saving power and lamp life
Tunnel Cooling System for the quietest and most satisfying viewing environment

Optoma
www.optoma.com

PICTURE BY DLP™ A TEXAS INSTRUMENTS TECHNOLOGY

© 2004 Optoma Technology, Inc. DLP™ and the DLP™ medallion are trademarks of Texas Instruments

PC WORLD

EDITOR IN CHIEF Harry McCracken
CREATIVE DIRECTOR Robert Kanes
EDITOR, PCWORLD.COM Ramon G. McLeod
MANAGING EDITOR Kimberly Brinson
EXECUTIVE PRODUCER Andrew Eisner
EXECUTIVE EDITORS Edward N. Albro, Tracey Capen, Randy Ross
TEST CENTER DIRECTOR Ulrike Diehlmann

PHONE: 415/243-0500
FAX: 415/442-1891
E-MAIL: letters@pcworld.com
WORLD WIDE WEB: www.pcworld.com
AOL KEYWORD: pcworld
MAIL: PC World Editorial 501 Second St. #600 San Francisco, CA 94107
STAFF E-MAIL ADDRESSES: To contact any *PC World* staff member, simply format the address as follows: *firstname_lastname@* pcworld.com

EDITORIAL

ASSISTANT MANAGING EDITOR Paul-Michael King
SENIOR EDITORS Yardena Arar, Rex Farrance, Rebecca Freed, Karl Koessel, Michael S. Lasky, Aoife M. McEvoy, Alan Stafford, Peggy Watt, Anush Yegyazarian
SENIOR ASSOCIATE EDITORS Grace Aquino, Richard Baguley, Andrew Brandt, Eric Dahl, Kalpana Ettenson, Tom Mainelli, Anne B. McDonald, Dennis O'Reilly, Dan Sommer
SENIOR REPORTER Tom Spring
ASSOCIATE EDITORS Eric Butterfield, Liane Cassavoy, Melissa J. Perenson, Narasu Rebbapragada
SENIOR PRODUCER, DOWNLOADS Max Green
STAFF EDITOR Laura Blackwell
SENIOR COPY EDITORS Stephen Compton, Steven Gray, Tracy Yee-Vaught, Sally Zahner
ONLINE INDEXER David Lake
SENIOR RESEARCH EDITOR Kristina Saar
EDITORIAL PRODUCTION ASSOCIATE Henry Pham
EDITORIAL ASSISTANT Stephanie Layton
FOUNDER David Bunnell
FOUNDING EDITOR Andrew Fluegelman

ART AND DESIGN

DEPUTY ART DIRECTOR Barbara Adamson
ASSOCIATE ART DIRECTORS Kate Godfrey, Pierre Granier
ASSISTANT ART DIRECTORS Jeff Berlin, Beth Kamoroff
SENIOR DESIGNER Diego Aguirre
ASSOCIATE DESIGNER Marlene Tobias
DIGITAL IMAGING SPECIALIST Rick Rizner

CONTRIBUTING EDITORS

Steve Bass, Scott Dunn, Steve Fox, Judy Heim, Stuart J. Johnston, Anne Kandra, Dan Littman, Stephen Manes, James A. Martin, Scott Spanbauer, Lincoln Spector, Kirk Steers, Carla Thornton, Dan Tynan

PC WORLD TEST CENTER

TEST CENTER DIRECTOR Ulrike Diehlmann
MANAGER OF BENCHMARK DEVELOPMENT James Motch
SENIOR PERFORMANCE ANALYSTS Elliott S. Kirschling, Jeffrey Kuta
DEVELOPMENT ANALYST Thomas Luong
PERFORMANCE ANALYSTS Tony K. Leung, Chen Xing Wang
SENIOR TEST CENTER COORDINATOR Julian Weatherby
TEST CENTER COORDINATOR Julio C. Giannobile

MAILING LISTS

Occasionally we make our subscribers' names available to other companies whose products may interest you. To have your name excluded from these mailings, send a request along with your mailing label to PC World Subscriber Services, P.O. Box 37571, Boone, IA 50037-0571 or e-mail us at pcwcustserv@cdsfulfillment.com.

PCW COMMUNICATIONS

PRESIDENT, CEO Jeff Edman
PUBLISHER Bob Ostrow
SENIOR VP, COO/CFO Vicki Peilen
VP, HUMAN RESOURCES Kate Coldwell
VP, CONSUMER MARKETING Shawne Burke Pecar

NEW PRODUCT ANNOUNCEMENTS

Send press releases via e-mail to newproducts@pcworld.com.

BACK ISSUES

PC World issues are available in digital format starting with the July 2002 issue. Go to www.pcworld.com/singlecopy. *PC World* issues and article copies are available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 800/521-0600.

SUBSCRIPTION SERVICES

MAIL: PC World Subscriber Services, P.O. Box 37571, Boone, IA 50037-0571 (Include a mailing label with correspondence.)
INTERNET: www.pcworld.com/customer
E-MAIL: pcwcustserv@cdsfulfillment.com (Send your full name and the address at which you subscribe; do not send attachments.)
PHONE: In the U.S. 800/234-3498; New orders 800/825-7595
FAX: 515/432-6994

QUESTIONS AND SUBMISSIONS

Send material electronically to the appropriate online address listed below, or mail it to *PC World*. We reserve the right to edit letters. *PC World* pays $50 for published *Here's How* tips and questions; accepted submissions will be acknowledged by payment. Editors cannot guarantee personal responses to all questions.

ANSWER LINE: answer@pcworld.com
BUGS AND FIXES: bugs@pcworld.com
CONSUMER WATCH: consumerwatch@pcworld.com
FULL DISCLOSURE: steve@cranky.com
HARDWARE TIPS: kirk_steers@pcworld.com
HOME OFFICE: homeoffice@pcworld.com
INTERNET TIPS: nettips@spanbauer.com
LETTERS: letters@pcworld.com
ON YOUR SIDE: onyourside@pcworld.com
PLUGGED IN: steve_fox@pcworld.com
PRIVACY WATCH: privacywatch@pcworld.com
WINDOWS TIPS: scott_dunn@pcworld.com

REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from *PC World*. Write to PC World, Reprints and Permissions, 501 Second St. #600, San Francisco, CA 94107, or e-mail permissions@pcworld.com; include a phone number. To order reprints of your company's editorial coverage in *PC World*, call 717/399-1900 ext. 135.

Seeing is believing... if only it could be seen. And let's face it, with dial-up, it's usually faster to visit Grandma than it is to download her latest photo. No more. With the ease and power of eFotoXpress, even the biggest digital image can be compressed to an e-mail friendly 80 kb — complete with a personalized voice greeting. Now it's time to see — and hear — what you've been missing.

See. Send. Print.

eFotoXpress

eFotoXpress.com | Sales@eFotoXpress.com
JPEG 2000 Image Compression

3/4 5+ megapixel

Summer vacation at Loch Ness... too bad it's too big to send.

- Provides leading-edge 32-bit performance for music, video, and games and is ready for future 64-bit software
- Improves security against certain types of viruses, with Enhanced Virus Protection for Microsoft® Windows® XP SP2
- Conserves power and operates quietly with AMD Cool'n'Quiet™ technology

VROOM VROOM.

THE ONLY MICROSOFT® WINDOWS® - COMPATIBLE 64-BIT PC PROCESSOR AVAILABLE TODAY

February 2004 — PC WORLD Best BUY — Awesome 6300

May 2004 — PC WORLD Best BUY — Ultimate M5[64]

July 2004 — PC WORLD Best BUY — Ultimate M6

ABS® Ultimate M5[64]

AMD Athlon™ 64 Socket 939 3500+ Processor with HyperTransport™ Technology*
Up To 2000MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Cooler Master CAV-T01-WWA Case w/Side Panel & Sound Pressure Device

Antec True 480W Power Supply

ASUS A8V Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Free Upgrade to Corsair XMS 1024 MB PC3200 DDR SDRAM Memory

LeadTek nVIDIA® GeForce 6800 A400 TDH 128MB DDR Video Card

Realtek ALC850 8-Channel Codec Audio

Maxtor 160GB RAID 0 (2x80GB) 7200RPM SATA150 Hard Drive w/8MB Cache

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Logitech Premium Desktop USB/PS2 Keyboard & Cordless Optical Mouse

Microsoft® Windows® XP Home Edition

Regular Price ~~$1949~~ Sale Price **$1899**

ABS® Ultimate M5

AMD Athlon™ 64 3400+ Processor with HyperTransport™ Technology*
Up To 1600MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Silverstone Black Aluminum Face Mid-Tower Case

Antec True 480W Power Supply

ASUS K8V SE Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Free Upgrade to Corsair XMS 1024MB PC3200 DDR SDRAM Memory

LeadTek nVIDIA® GeForce 6800 A400 TDH 128MB DDR Video Card

ADI AD1980 5.1 Surround Sound with Dolby Digital

Maxtor 160GB RAID 0 (2x80GB) 7200RPM SATA150 Hard Drive w/8MB Cache

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Black Microsoft Internet Keyboard & Microsoft Intellimouse Optical

Microsoft® Windows® XP Home Edition

$1749

ABS® Awesome 5300

AMD Athlon™ 64 Socket 939 3500+ Processor with HyperTransport™ Technology*
Up To 2000MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Cooler Master Centurion 5 "CAC-T05-WBA" Mid-Tower Case w/ Side Panel

Antec True 480W Power Supply

ASUS A8V Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Corsair XMS 512MB PC3200 DDR SDRAM Memory

ATI Radeon 9800 Pro 128MB DDR Video Card

Maxtor 80GB 7200RPM SATA150 Hard Drive w/8MB Cache

Realtek ALC850 8-Channel codec Audio

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Logitech Premium Desktop USB/PS2 Keyboard & Cordless Optical Mouse

Microsoft® Windows® XP Home Edition

$1599

ABS® Recommends Microsoft® Windows® XP

Get $25 off any advertised system! Online Only.
Use Promotion Code: 25PW10 at Checkout

ABS®

www.abspc.com/pw10

800.876.8088

Always Better Service

- 1 Year Limited Parts Warranty
- 30 Days Money Back Guarantee
- Hours: Mon-Fri 8:30AM-5:30PM PST
- 24/7 Technical Support: 888.983.9988
- Lifetime Toll-Free Tech Support

Price, specification, and terms are subject to change without notice. Illustrations may not accurately represent exact configurations priced. ABS® is not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. Onsite service may be provided by contracted third party provider. Technician will be dispatched if necessary following phone support. © 2004 All rights reserved. AMD, the AMD Athlon, AMD Arrow logo and combinations thereof are trademarks of Advance Micro Devices.

Designed to work the way you work.

- 19" Analog/Digital TFT-LCD
- Full pivot, tilt and swivel, wall mountable
- 178°/178° — Widest viewing angle of any LCD
- MagicTune™ on-screen image control

Samsung's 193P display.

We know how you work. So we engineer our monitors to work the same way you do. Our 193P display is ergonomically designed to move the way you move. And with its MagicTune™ software, personalizing your display is now a hands-free experience. This kind of thinking is responsible for over 67 design awards worldwide. Not to mention, monitors that work on the same level as you.

Visit www.samsungusa.com/monitor or call 1-800-SAMSUNG

SAMSUNG

©2001 Samsung Electronics America, Inc. Samsung and MagicTune are registered marks of Samsung Electronics Corp., Ltd. Screen images simulated.

HARRY McCRACKEN

You're Using an Annoying Browser

Still running Internet Explorer? Switching is easier—and smarter—than ever.

TALK ABOUT A NEVER-ENDING BATTLE! For the third October in a row, our cover spotlights the nuisances that obstruct PC productivity. We like to think we're making a dent in the problem. But annoyances are sort of like Tribbles: Get rid of one, and a half-dozen more pop up to trouble you.

So this time around, we're devoting an entire special issue—spearheaded by Executive Editor Edward N. Albro—to irritations and their fixes. To which I hereby add another bit of annoyance-busting advice: Ditch your browser.

That's assuming you use Internet Explorer, of course. (Odds are you do: 88 percent of visitors to our Web site run it.) Windows XP Service Pack 2 seals some security holes and adds (finally!) a pop-up blocker, but IE feels increasingly like a shaky, lumbering dinosaur.

By contrast, its leading rivals, Mozilla Firefox and Opera, are full of tools to make browsing less taxing. And while no browser is a fortress, these two are safe from a bevy of IE-specific glitches. Some of those holes are serious enough that the Department of Homeland Security's computer security division has publicly mused about the benefits of switching (see "Is It Time to Ditch IE?," page 34).

It wasn't always this way. Back when the browser war raged, IE received frequent (and meaty) upgrades. Only when a bundled-with-Windows IE conquered the market did it start to calcify.

But a funny thing happened when the war ended: The losers forgot to surrender. True, Netscape, like Microsoft, ceased doing much to beef up its browser. But instead, the company did something at least as constructive: It created an open-source version, Mozilla, that third-party developers could reinvent.

Firefox (www.mozilla.org), the newest Mozilla upgrade, is still in beta as I write. Already, though, this free download is an uncommonly polished product. For instance, searching for a phrase in a Web page couldn't be simpler: Just start typing the word, and Firefox scrolls forward to find it. And tabbed browsing, which lets you wrangle multiple Web pages in one window, feels like an essential feature that IE never got around to implementing.

Meanwhile, the Norwegian creators of Opera (www.opera.com) continue to add new stuff. In some ways, their browser is more inventive (albeit more cluttered) than Firefox. For example, it has an RSS newsreader and a nifty little note-taker built in. The full version costs $39, but the ad-supported edition is free.

Nervous that your favorite Web sites won't function well in a browser that doesn't hail from Redmond? Don't stress out about it: I've adopted Firefox as my primary browser for work and play, and nearly every site I've visited is at least as functional in Firefox as it would be in Internet Explorer. IE remains on my drive for sites and services that demand it.

Many of my cohorts have moved on, too: A plurality of our editors now favor Mozilla. Our office may be an atypical workplace, but every new IE security bulletin provides more reason to try an underdog alternative.

I'm not saying that Firefox or Opera will win Browser War II. Still, if even a small fraction of the world were to abandon Internet Explorer, Microsoft would surely work harder to build a better browser. And that wouldn't be annoying at all. ■

Visit Editor in Chief Harry McCracken's Weblog at blogs.pcworld.com/techlog; contact him at mageditor@pcworld.com.

A Whole New World: HDTV, DVD recorders, Media Center PCs, gaming phones—don't look now, but entertainment has gone digital. And now there's *Digital World*, a new bimonthly publication from *PC World* filled with reviews, news, and help on these products and much more.

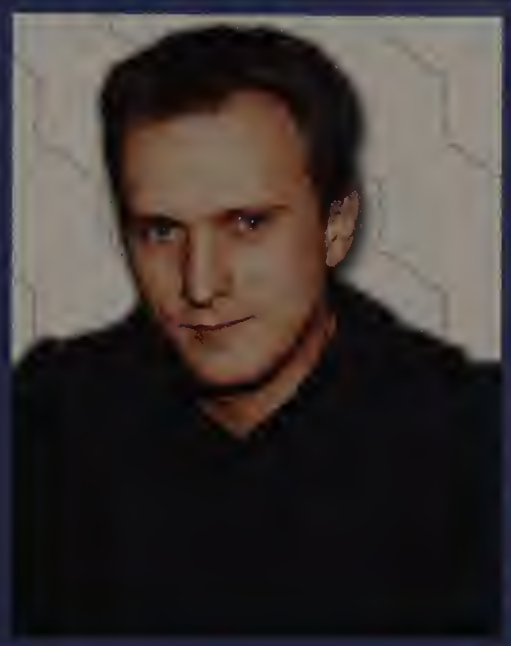
If you're a *PC World* subscriber, you can download *DW* in Adobe Reader format at find.pcworld.com/43830. Copies of *PC World* sold at newsstands and other retailers will include the print version. Check out www.digital-world.com for more information.

ILLUSTRATION: EDWIN FOTHERINGHAM

IPOWER

The #1 Selling eBusiness Solution Worldwide

THE #1 FASTEST GROWING SHARED WEB HOSTING PROVIDER WORLDWIDE



iPower is the #1 Website Hosting provider in the United States. Our Internet based end-to-end solutions enable small and medium sized enterprises (SME's) to build, promote, manage and profit from their online presence.

iPower's market-leading, unique, customer-centric suite of web site hosting solutions has quickly become the first choice of SME's, Webmasters, Developers, Designers and everyday Internet Users Worldwide looking to leverage the power of the Internet.

iPower has garnered several awards for outstanding performance and customer service including the 100Best "Best Overall Host for 2002 & 2003" and Host Pulse's "World's Best Web Hosting Company." With iPower, you can feel confident that you will receive rock-solid hosting with the customer service you expect and deserve.

Sincerely,
Thomas Gorny
IPower CEO & President

WEBHOST DIRECTORY AWARD WINNER

NETCRAFT
One of the Top 5 Most Reliable Hosts

c|net
Top 3 - Most Popular

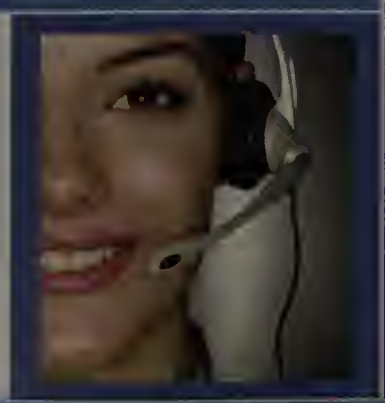
HOST OF THE YEAR WINNER 2003
Host of the Year 2002 & 2003

DATA CENTER

iPower owns and operates four Internet Data Centers across United States. Our world-class Tier 1 facilities are optimized to provide an industry-leading web, data, and applications hosting environment and are strategically located on AT&T's, Global Crossing and Cable & Wireless', Level3, QWest and MFN OC48 / OC192 Global IP backbones.

CUSTOMER SERVICE

iPower has garnered several awards for outstanding performance and customer service including the 100Best "Best Host of the Year" for both 2002 & 2003 and Host Pulse's "World's Best Web Hosting Company."



CUSTOMER TESTIMONIALS

I was pleasantly surprised that tech support got back to me quickly and their answers were courteous, accurate, and succinct. Great! - Alan

I am very impressed with how fast you got back to me, I feel great knowing that I can e-mail you with a problem and know that I will receive a response within minutes. - Susan

I can say without reservation that I have never received better support. Everything you did was timely and error-free. - Bob

I just wanted to tell you how pleased I am with the software, training, and speed. It was much easiier than I thought, and I could not be happier! Thanks! - David

I'm really impressed with the fast service you guys provide and the polite way you deal with what must seem very basic questions to you. Brilliant service! Thanks! - Sarah

I now have a few sites with you guys and believe me, I know the quality of your service, and it is a pleasure dealing with you. Your company is tops. Thanx again. - Dusty

SPECIAL PROMOTION OFFER:
HTTP://WWW.IPOWER.COM/PCWORLD

TEL: (888) 511-HOST
24/7x365 LIVE CHAT AND HELP

76% OFF

FREE CD-ROM!

Subscribe to PC WORLD and save 76%.
Plus, receive your FREE Gift.

PC WORLD's **Windows Tips CD-ROM** is loaded with helpful hints, shortcuts and more.

☑ **YES,** I want to stay ahead of the competition with PC WORLD's product reviews, news and How-To tips and techniques. I'll pay only $19.97 for 12 monthly issues — ***76% off the annual newsstand price*** — plus I'll receive a FREE CD-ROM with my order.

MAIL THIS CARD OR CALL 800-825-7595 • FAX: 515-432-6994

NAME

ADDRESS

CITY/STATE/ZIP

EMAIL (OPTIONAL)

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

Offer good in the US only. In Canada, please add $12 USD per subscription for postage, plus 7% GST (#R124669680). All other countries send $49.97 to PC World, P.O. 8ox 37560, 8oone IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4AN2DH81

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558

WHY IS IPOWER THE RIGHT CHOICE FOR YOU?

WEB HOSTING

iPower Pro Plan

- 800 Megs of Storage
- 400 Email Accounts
- 1 FREE DOMAIN
- SSL / CGI-BIN / MySQL
- Unlimited Email Forwarding
- FREE Marketing Tools
- FREE Content Package
- FREE $50 Overture Credit

$7.95 per month

iPower Pro Plus

- 2 Gigs of Storage
- Unlimited Email Accounts
- 3 FREE DOMAINS
- SSL / CGI-BIN / MySQL
- Unlimited Email Forwarding
- FREE Marketing Tools
- FREE Content Package
- FREE $50 Overture Credit

$12.95 per month

Virtual Server

- 10 Gigs of Storage
- Unlimited Email Accounts
- 10 FREE DOMAINS
- SSL / CGI-BIN / MySQL
- Perl and PHP Support
- Secure Telnet Access
- 100 Gig Transfer
- FreeBSD, Linux, Windows

$19.95 per month

PRODUCTS & SERVICES

DOMAIN NAMES $5.50

- Lowest Pricing on the Net
- Get a FREE Parking Page
- Domain Utilities Manager
- FREE Email Forwarding

Domain Name Registration

WEB BUILDER $4.95

- FREE Domain / Email / Design
- Professional Web Templates
- Web Design Manager
- Logo Creator & Content Editor

Web Design

DEDICATED SERVERS $49.00

- 99.9% IP Network Reliability
- Four OC-48 Datacenters
- 24x7 Monitoring & Support
- Plesk 7 Control Panel

Dedicated Servers

IPOWER BONUSES

Get $50 Credit with overture® When You Register a Domain with iPower!

FREE $50 Overture Credit

Search Engine Submissions, Banner Impression, Website Optimization Tools, and Comprehensive Guides.

FREE Marketing Tools

You can get up to 10 Domain Names FREE!

FREE Domain Names

SPECIAL PROMOTION OFFER:
HTTP://WWW.IPOWER.COM/PCWORLD

TEL: (888) 511-HOST
24/7x365 LIVE CHAT AND HELP

What's new and what's next in technology

NEWS & TRENDS

EDITED BY RAMON G. McLEOD

INSIDE

30 TIME TO GET A WORKSTATION INSTEAD OF A PC?

32 CHEAPER, SMARTER USB FLASH DRIVES

34 IS IE STILL YOUR BEST BET FOR A BROWSER?

38 AFFORDABLE 7-MEGAPIXEL CAMERAS

38 THREE MINUTES WITH HDNET'S MARK CUBAN

Sneaky Sharing

DESPITE WELL-PUBLICIZED WINS BY PIRACY FOES, ILLEGAL DIGITAL MUSIC AND MOVIE TRADING CONTINUES TO FLOURISH IN UNDERGROUND HAVENS. BY MICHAEL DESMOND

WHERE HAS ALL the good illegal peer-to-peer action gone? Underground. In some cases, *waaaaay* underground. Fearful of reprisals from the major entertainment companies and worried about virus-laden, corrupted, or spoofed files, many users are shying away from the big-name file-sharing networks like Kazaa and WinMX, and have gone straight, buying their music and video from legal sources. That's a win for Hollywood.

But it is also clear that large numbers of music and video pirates are simply looking elsewhere for their booty and have turned to lesser-known P-to-P networks, Usenet, and even invitation-only networks.

"Users are very much moving around...rather than moving out," says Eric Garland, the CEO of BigChampagne, a market research firm specializing in P-to-P activity.

To combat the new threats, Hollywood has turned to old standbys: new legislation, more lawsuits, and improved copy-control technology.

Once boasting over 30 million users, Kazaa is now down to about 16 million, according to research firm ComScore Media Metrix. WinMX users have dropped from a high of 6.8 million down to 6 million this May, the firm says. If you looked just at these results, it would appear that entertainment companies are winning

ILLUSTRATION: PETER HOEY

the war. But these statistics show only a partial picture of the piracy problem.

STILL TRADING

HAVE USERS really reformed? Not really: Many are flocking to smaller P-to-P networks like BitTorrent, EDonkey, and EMule. According to ComScore, BitTorrent nearly doubled in users, from about 200,000 to more than 400,000 between November 2003 and May 2004; EMule grew from under 100,000 users in February 2003 to nearly 300,000 a year later. EDonkey, which ComScore did not track in its survey, has made even bigger gains, says Garland.

Their usage numbers may not be on the same scale as the old Napster's, but these services may pose a greater threat to content owners than previous P-to-P networks. All three use an advanced technique called *swarming*, in which portions of files are downloaded from multiple sources and immediately offered to the network. The result: potentially faster downloads and more rapid propagation of content.

And there are other options for pirated content.

Internet newsgroups, best known by the collective name Usenet, offer a vast reservoir of music, movies, and software, at connection speeds that can put the better-known P-to-P services to shame.

In the past, the difficulty of using newsgroups, combined with limits ISPs place on file transfers, has stunted the growth of piracy on them. That could change, particularly with the emergence of user-friendly software—such as the freely available Xnews reader—that makes accessing content in newsgroups easier than dealing with the more unpredictable P-to-P services.

But even if newsgroups become a more popular venue for illegal file trading, they are generally still public and therefore trackable. Private networks set up by file traders are harder to track or quantify.

"John," an IT manager for a financial services firm in the Midwest, says that he and his friends have traded files over an encrypted virtual private network they set up expressly for that purpose. And more and more music and video is being traded face-to-face.

> Fast, advanced new P-to-P services may pose an even greater piracy threat than the old ones did.

"If it's music, it's almost always sneakernet," John says. "It's just so much easier to hand someone a USB drive and say, 'Bring it back to me next week.' It's easy to trade someone 20 gigs of music for 20 gigs of music."

GOING STRAIGHT OR DROPPING OUT?

THE GOOD NEWS for Hollywood is that the piracy crackdown in the last two years has persuaded substantial numbers of people to go legit. A Pew Internet Project report reveals an increase in those who say they download music files, from 18 million in December 2003 to 23 million in February 2004—17 percent of whom use legal services like ITunes or Musicmatch. And ComScore data shows that the six largest online music shopping services drew more than 11 million visits from U.S. users in March alone.

That's as it should be, says Marc Morgenstern, vice president and general manager of Loudeye's Digital Media Asset Protection Business. The company sells online-content-protection services to the music, movie, game, and software industries. Its Overpeer service line is responsible for some of the decoy files masquerading as copyrighted content on P-to-P networks. The aim: to make file sharing so inconvenient that consumers will pay for a more predictable and satisfying experience.

"[The file-sharing community is] starting to notice. If you go on bulletin boards, you will see that people are getting frustrated by this activity," says Morgenstern.

But while file-sharing oldtimers may be frustrated, Hollywood's aggressive antipiracy campaigns may also be scaring off potential customers for legal download services.

The Pew study shows that the Recording Industry Association of America's legal actions are discouraging potential first-time users of legit services. About 60 percent of those who have never tried downloading don't want to go to any source of downloaded music—legal or not—for fear of lawsuits, the study says.

The much-publicized antipiracy lawsuits aren't the only reason users might be confused as they consider ▶

IN BRIEF

Tidbyte

OFFICE 2003 TUNE-UP: While there are many small improvements throughout it, Microsoft Office 2003 Service Pack 1's most visible changes appear in the note-taking application OneNote and in the XML-creation program InfoPath. OneNote now allows multiple users to collaborate on a document in real time; you can insert documents created with other Office apps into a OneNote document, and you also can copy notes that you've taken on a Pocket PC or Smartphone. InfoPath gains tools for using managed code and advanced XML schemas. Download Office SP1 (compressed size 21GB) for free at office.microsoft.com.

Product Pipeline

AT YOUR SIDE: Danger is updating its trendy Sidekick cell phone/PDA with a new keyboard, a built-in VGA camera with flash (the previous model offered an optional camera accessory), and a selection of new software. The Sidekick II is also about 25 percent thinner than its popular predecessor. Look for the device this fall through T-Mobile. find.pcworld.com/43862.

buying digital tunes. It can be hard to tell the good guys from the bad. Some legitimate music services such as Great Britain's Wippit use the same basic peer-to-peer technology that powers pirate havens like Kazaa, while the Russia-based Allofmp3.com, for example, has a download music store with appealingly low prices—but its licenses are based on Russian copyright laws, so its content may be illegal for users outside of that country.

UPPING THE ANTE

DESPITE AN OVERALL drop in P-to-P activity, the RIAA, the Motion Picture Association of America, and the BSA continue to publish apocalyptic estimates of revenue lost to online and offline piracy. The BSA, for instance, maintains that in 2003 nearly $29 billion worth of pirated software was installed on PCs worldwide. The music industry primarily blames file sharing and music piracy for drops in U.S. sales, from a peak of $14.6 billion in 2000 to $11.9 billion in 2003. What's more, as worldwide broadband adoption continues to grow—especially in Asia—these groups expect the problem to worsen.

Widely available broadband has enabled pirates to expand beyond music to other kinds of digital media. "Accesses for movies and games are increasing dramatically," says Morgenstern. "As soon as a game or movie is released, there is a race out there to get it onto peer-to-peer."

How are antipiracy groups responding? For one thing, they're pushing for more targeted legislation to strictly limit behaviors and technologies that can encourage copyright infringement, points out BigChampagne's Garland.

A flurry of such bills is advancing through Congress, including the Inducing Infringement of Copyright Act (S 2560), which would effectively criminalize P-to-P networks that encourage trading of copyrighted material (see find.pcworld.com/43966 for details on this and other bills).

The legislative effort won't end the cat-and-mouse game, says Morgenstern, because some of these P-to-P software vendors, such as EDonkey, are offshore. And with Gnutella, a popular open-source P-to-P program, "there is no there, there," he says—it's a super-distributed network. "This is a gnarly, worldwide problem. Peer-to-peer networks are not going to go away."

> Scared of lawsuits, 60 percent of potential new users won't try downloading music at all.

So in addition to new laws, entertainment and computer companies are bringing new technologies to the content-protection table. One of the more notable is in Microsoft's upcoming Windows Media Digital Rights Management 10 software, formerly code-named Janus. Though it's meant to facilitate the secure downloading of content from subscription services to portable players, its mission could expand. Janus includes a protected, real-time clock in digital media that permits playback only after verifying that a license is valid. Microsoft has a bevy of partners; expect compatible devices and digital media offerings this year.

Microsoft's software could also work with another DRM scheme called Advanced Access Content System. AACS is intended for use with next-generation optical discs, such as Blu-ray and HD-DVDs. It's in the development stage and should work with other existing DRM technology; it may also let users copy a disc onto a compliant movie server in their home or onto select portable devices. AACS has backing from Disney and Warner Brothers, as well as from several major computer firms like IBM, Intel, Microsoft, and Sony, among others.

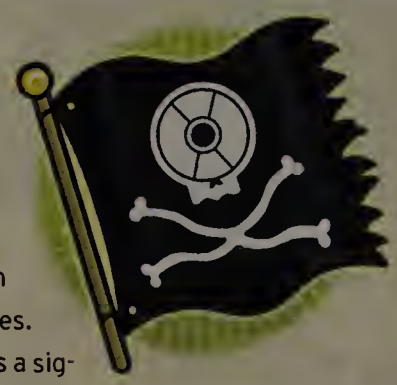
TiVo's upcoming digital broadcast security technology, recently blessed by the Federal Communications Commission, permits some sharing of DTV broadcast content over the Internet. It allows a TiVo user to send recorded free, over-the-air DTV programs via the Net to other TiVo boxes or PCs registered to that user.

File sharing is here to stay, and the new DRM technologies do acknowledge that and plan for it. Whether they will give users enough rights to make illegal sharing no more than a blip in the digital media market remains to be seen.

Additional reporting by Liane Cassavoy and Mark Sullivan.

UPDATE

SOFTWARE ON THE SLY



HOLLYWOOD IS not alone in feeling the pinch of online pirates. The software industry also faces a significant and growing threat from pirates who spam users relentlessly, marketing cheap, bare-bones copies of popular software such as major products from Adobe, Intuit, and Microsoft.

The e-mail originates largely from Eastern Europe, says John Wolfe, the Business Software Association's manager of investigations. While the spam often describes these copies as being for personal "backup" purposes, Wolfe emphasizes that the practice clearly violates copyright law: The sites make no effort to verify that buyers already have a license for the software, and many offer cracks that let buyers avoid the software's copy protection.

Most such sites have sprung up in the last 12 months, according to industry investigations. And though illegal software sales are difficult to track, Sean Myers, manager of Internet antipiracy at the Software Information and Industry Association, says that, based on his observations, sales of sham backup copies have tripled in the past year.

The BSA and similar groups have a very limited ability to confront offshore pirates. So as with P-to-P file sharing, scrutiny could fall on those who buy the illegal copies of applications.

ILLUSTRATION: PETER HOEY

Having a baby is labor enough.
Making a movie of his first year
shouldn't have to be.

Introducing Pinnacle Studio™ Plus. You've done the hard part—had the baby and shot the video. Now comes the easy part: putting all those memorable moments together. That's because Pinnacle Studio Plus has taken all the guesswork out of home editing and delivered a simple, powerful tool that will have you making movies within minutes. It really is that easy. And it can work with a digital or analog camera. And when you're finished, just use the Studio Plus DVD maker to burn a masterpiece that's ready to be shared with the world. Little wonder Pinnacle is the leader when it comes to home video editing solutions. And to make things even easier, we've created a step-by-step guide you can download and follow when it's time to make that all-important birthday party video. The only thing you'll have to figure out is when to have your premiere. To learn how to make a great birthday video of your own and to download a valuable Pinnacle Studio Plus coupon, visit www.StudioHowTo.com/3

PINNACLE® SYSTEMS

©2004 Pinnacle Systems, Inc. All Rights Reserved. Pinnacle Systems and Pinnacle Studio are registered trademarks or trademarks of Pinnacle Systems, Inc. in the United States and other countries. Photo: Howard Schatz.

SYSTEMS

Should Your Next PC Be a Workstation?

DESPITE SUB-$1000 PRICES, THE ANSWER STILL DEPENDS ON WHAT APPS YOU RUN.

THE HP Workstation Xw4200 and Dell Precision Workstation 370 may draw the interest of 'prosumer' users seeking more power.

UNTIL RECENTLY, *workstation* meant a pricey power system that graced the desk of an engineer, a graphics designer, or a professional video editor. But astute PC shoppers who see workstations following conventional desktop PCs down past the $1000 barrier are asking: Should I buy a workstation instead?

The answer: Get one only if you run industrial-strength programs that need high-end graphics and performance, and if you're willing to pay extra for fail-safe reliability. Workstations remain special-purpose systems that contain souped-up hardware and undergo extensive testing, which costs a premium. But with that premium down to a few hundred bucks, the choice really depends on your needs.

It's easy to find affordable, introductory workstations that run Windows. Both Dell and Hewlett-Packard market Windows XP–based workstations starting at under $1000 and stretching to about $3500; IBM's offerings cost only a few hundred dollars more. Midrange ($3000 to $10,000) and high-end units typically have bigger cases than PCs, more memory and PCI slots, and more drive bays, making frequent upgrades easy.

POWER, REDUNDANCY

MOST WORKSTATIONS have error-checking and -correcting memory that won't drop the occasional bit—a flaw unnoticeable in fast-moving games but disastrous when calculating jet aircraft tolerances. These units have larger power supplies and better, quieter fans to avoid overheating.

Even some entry-level workstations support dual CPUs, but they need multithreaded software to benefit from them. Adobe Photoshop is multithreaded, but few games are. Microsoft Office's dual-CPU support makes background operations faster and stabler.

Workstations often contain two SCSI or Serial ATA hard drives zipping along at up to 15,000 rpm, and RAID striping to split data between the drives to jack up performance.

New PC components are going right into workstations. The first units of DDR2 memory run at 533 MHz (as with both workstations we tested) but can reach 1 GHz, outpacing the older, 400-MHz DDR. Workstations put the PCI Express bus to good use, as well; Advanced Micro Devices says its Hyper Transport Technology performs similarly.

Workstation graphics ▶

TEST REPORT

WORKSTATIONS RUN FAST, BUT THEIR CAPABILITIES VARY

AN INDUSTRIAL-STRENGTH GRAPHICS board makes a noticeable difference in a workstation's performance with some applications.

SYSTEM	Price	Processor	Memory	Graphics card	WorldBench 5 (Faster)	TIME (IN SECONDS) REQUIRED TO RUN TEST				FPS
						Adobe Photoshop 7.0.1	Microsoft Office 2002 with SP2	WinZip 8.1	Musicmatch Jukebox	Return to Castle Wolfenstein
Dell Precision Workstation 370 find.pcworld.com/43994	$3446	3.6-GHz Pentium 4	2GB/DDR2-533 SDRAM	256MB NVidia Quadro 6 Series	112	328	508	281	459	140
HP Workstation Xw4200 find.pcworld.com/43996	$3602	3.4-GHz Pentium 4	2GB/DDR2-533 SDRAM	64MB NVidia Quadro NVS PCI-E	107	343	511	296	482	40
Dell Dimension 8400 (comparison desktop) find.pcworld.com/43544	$2999	3.6-GHz Pentium 4	1GB/ DDR2-533 SDRAM	256MB ATI Radeon X800 XT	98	333	514	356	464	138

TEST Center **FOOTNOTE:** Frames per second. Tested at 1024 by 768 resolution and 32 bit color. **HOW WE TEST:** All PCs ran Windows XP Professional Edition and were tested with WorldBench 5, *PC World's* applications-based benchmark, as well as an assortment of other benchmarks. See find.pcworld.com/43998 for a complete explanation. Tests developed and conducted by the PC World Test Center. All rights reserved. **CHART NOTE:** A higher score is better on WorldBench 5 and Return to Castle Wolfenstein; for other tests, lower is better.

PHOTOGRAPH: KEVIN CANDLAND

Kodak
Share Moments. Share Life.™
Kodak
COLOR
SCIENCE
CHIP
Schneider-KREUZNACH
VARIOGON 39mm-117mm (Equivalent) 3x Optical
Kodak
EasyShare DX7630
6.1 Megapixels
Proof that engineers dream in color.
Kodak EasyShare DX7630 zoom digital camera
Want hyper-vivid pictures during waking hours? Try the only digital camera with Kodak color science power, 6.1 MP and a Schneider-Kreuznach 3x optical zoom lens. All harnessed for amazing color. Learn more at Kodak.com
Just press share™

cards usually run faster and have more memory than PC boards, and support OpenGL, which adds realistic 3D rendering and is used by dozens of games. NVidia's Quadro FX 4400 is popular; 3Dlabs, ATI, and Matrox also offer professional-class cards.

None of these technologies is unique to workstations. What truly demarcates a workstation from an ordinary PC is added testing to ensure that demanding apps run smoothly. For solid reliability, workstation makers seek certification from software vendors. Workstations also run special speed-tweaking utilities.

Vendors say even the new low-end models go to users with special reliability and performance needs. For example, Wall Street types crunch huge spreadsheets and use multiple real-time displays. "We tune for these kinds of applications," says Joe Curley, Dell's senior manager for the Precision line of workstations.

HP also promotes to "prosumers," notably game enthusiasts who want the class of machines the games were designed on. Vendors report interest from serious amateur video editors, who seek graphics capabilities and reliability.

To see how Windows workstations compare with PCs, *PC World* tested the new Dell Precision Workstation 370 and HP Workstation Xw4200. The Dell posted the second-highest score ever on WorldBench 5, our revamped suite of real-world application tests. The Dell's score of 112 slightly outdid the HP's 107 (still a top-five mark), perhaps due to its slightly quicker 3.6-GHz Intel Pentium 4 processor (the HP's P4 runs at 3.4 GHz).

> What truly demarcates a workstation is testing to ensure rock-solid reliability.

Both showed their speed in our WinZip compression test. The HP unit's NVidia Quadro NVS PCI-E graphics board proved less well-suited to our graphics test; the Dell's workstation graphics card and extra video memory (256MB to the HP's 64MB) did much better. As expected, both workstations earned average scores on our Office and audio tests.

Are there any PC applications a workstation isn't good for? Not really, say the experts. The only drawback is price: For all their new affordability, workstations still cost more. "For every [price] drop you see in workstations, there's usually a deeper drop in PCs," says Lloyd Cohen, IDC's director of worldwide market analysis.

—*David Essex*

FLASH STORAGE

Tiny Drives With Big Brains

IT'S HARD TO RESIST THESE INCREASINGLY HANDY DEVICES. BUT SHOULD YOU TRY?

HAVING BASICALLY replaced floppy disks as the portable media of choice for small amounts of PC data, USB flash drives are pursuing more widespread adoption, sporting faster data transfer speeds, advanced features for desktop mobility and security, and lower prices.

However, that very popularity and versatility make them security risks for businesses, according to a recent report from Gartner Research, which recommends that companies consider forbidding the use of uncontrolled, privately owned devices on their equipment. The U.S. Department of Energy already has banned USB flash drives and other portable storage, such as Apple IPods, from the workplace, saying copying and stealing sensitive data with them is just too easy.

EXPANSION PLANS

DESPITE SUCH concerns, the drives' capabilities continue to grow. Take RedCannon Security's Fireball KeyPoint USB drive: Using its included software, you may surf the Web and leave no tracks. The KeyPoint also scans your PC for spyware and allows you to access a version of your e-mail account stored on the drive. The KeyPoint costs $299 for a 512MB model.

Meanwhile, the DiskOnKey division of M-Systems has unveiled what it claims are the fastest USB 2.0 flash drives yet available, boasting read rates as speedy as 23 megabytes per second and write speeds of 15 MBps, which is about 30 percent faster than the rates of competitors. The latest crop of DiskOnKey drives comes in an array of sizes, topping out at 2GB ($470).

The $130, bottle-cap-size Micro Mini 512MB USB 2.0 Drive from Iomega can hold dozens of portable applications called Active Disk software. While you currently can open only one app at a time, Iomega says that by winter the drive should handle opening multiple apps at once.

Security risks aside, the best news is that USB flash drives are increasingly affordable.

MINIATURE MEGABYTES from RedCannon (above left), M-Systems (right), and Iomega.

Analysts say prices will dip even lower over the next six months as new vendors begin making the type of memory these drives use, thereby creating price competition.

—*Tom Spring*

PHOTOGRAPH: KEVIN CANDLAND

Big business power, small business price tag.

Run your business on the processor many of the world's largest companies choose. Robust ZT Server based on the Intel® Xeon™ processor meet your needs today and grow with you into the future.

intel inside XEON

ZT Small Business Server X9245

Starting from $1,229

Intel® Xeon™ Processor 2.80 GHz
(Upgradeable to Dual Intel® Xeon™ 3.60 GHz 800MHz Processor)
Microsoft® Window® Small Business Server 2003 w/5 User License (add $399)
Intel® SE7320SP2 E7320 Chipset Server Board
512MB ECC Registered DDR266 SDRAM (Up to 8GB)
2 x Seagate® 120GB Serial ATA/150 7200RPM (8MB Cache) Hard Drive
(IN RAID 1 Configuration Mirroring)
1.44MB Floppy Drive
52x32x52 CD-RW & 16X DVD-Rom Combo Drive
ATI Rage XL SVGA 8MB PCI Graphics Controller
Intel® 82541GB 10/100/1000 Gigabit Network Controller
Intel® Server Management Software
Intel® SC5275-E MID-Tower Server Chassis w/600W Power Supply
3- year Limited Warranty

Front I/O
2 x Built-in front access USB ports

Dimensions
W 9.3" x H 17.8" x D 19.1"

ZT Enterprise 1U Server X9246

Starting from $1,369

Intel® Xeon™ Processor 2.80 GHz
(Upgradeable to Dual Intel® Xeon™ 3.20 GHz w/2MB cache)
Microsoft® Window® Server 2003 w/5 User License (add $659)
Intel® SE7501WV2SCSI E7501 Chipset Server Board
512MB ECC Registered DDR266 SDRAM (Up to 12GB)
Support Up to 3 x Ultra320 Hot-swap SCSI Hard Drive (Optional)
SCSI Hard Drive (Optional)
Integrated Dual Channel Ultra320 SCSI Controller (RAID 0,1)
Slim CD-ROM & 1.44MB Floppy Drive (Optional)
ATI Rage XL 8MB PCI Graphics Controller
Dual Intel® PRO/1000 Server Network Controllers
Intel Server Management Software
1U Sr1300 Rackmount Chassis W/350W Power Supply with PFC
3- year Limited Warranty

Front I/O
3 x Built-in front access USB ports
1 x VGA Video

Dimensions
W 16.9" x H 1.7" x D 23.5"

ZT Enterprise 2U Server X9247

Starting from $1,639

Intel® Xeon™ Processor 3 GHz
(Upgradeable to Dual Intel® Xeon™ 3 GHz Processor)
Microsoft® Window® Server 2003 w/5 User License (add $659)
Intel® SE7501WV2SCSI E7501 Chipset Server Board
512MB ECC Registered DDR266 SDRAM (Up to 12GB)
6 x Hot-swap Ultra320 SCA 1" SCSI Drive Cage w/ carriers
SCSI Hard Drive (Optional)
Integrated Dual Channel Ultra320 SCSI Controller (RAID 0,1)
Slim CD-ROM & 1.44MB Floppy Drive (Optional)
ATI Rage XL 8MB PCI Graphics Controller
Dual Intel® PRO/1000 Server Network Controllers
2U SR2300 Rackmount Chassis
480W Power Supply w/ PFC (Redundant Power Supply Optional)
3- year Limited Warranty

Front I/O
1 x Built-in front access USB ports
1 x Front Side SVGA Video

Dimensions
W 16.9" x H 3.4" x D 23.5"

ZT Enterprise 5U Server X9248

Starting from $1,739

Intel® Xeon™ Processor 3 GHz
(Upgradeable to Dual Intel® Xeon™ Processor 3.20 GHz)
Microsoft® Window® Small Business Server 2003 w/5 User License (add $399)
Intel® SE7501HG2 E7501 Chipset Server Board
512MB ECC Registered DDR266 SDRAM (Up to 16GB)
SCSI Hard Drive (Optional)
5 x Hot-swap Ultra320 SCA 1" SCSI Drive Bays
(Upgradeable to total 10 Hot-swap Ultra320 SCA 1" SCSI drive bays) (Optional)
Integrated Ultra320 SCSI Controller (Raid 0, 1)
16X DVD-ROM & 1.44MB Floppy Drive
ATI Rage XL 8MB PCI Graphics Controller
Dual Intel® PRO/1000 Server Network Controllers
Intel Server Management Software
Intel® SC5200 Convertible Tower Server Chassis
Dual Redundant 650W Power Supply with PFC
3- year Limited Warranty

Dimensions
W 17.5" x H 8.6" x D 26.9"

(984-7687)

866-ZTGROUP

http://www.ztgroup.com/go/pcw1004

Please contact our system specialists for any customize systems via email to Shopper@ztgroup.com or call (866)984-7687

Special Discount for Education, Government & Corporate

Quality Assured • 3- year Limited Warranty
Lifetime Tech Support •

ZT GROUP

Purchaser is responsible for all freight costs on all return of returns of merchandise. Full credit will not be given for incomplete or damage returns. Absolutely no refunds for merchandise returned after 30 days. All prices and configurations are subject to change without notice and obligation. Opened software is non-refundable. All return have to be accompanied with an RMA number and must be in re-sellable condition including all original packaging. System's picture may include some equipment and/or accessories, which are not standard features. Not responsible for errors in typography and/or photography. All rights reserved. All brands and product names, trademarks or registered trademarks are property of their respective companies. Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, Pentium, and Pentium III Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

BROWSERS

Is It Time to Ditch IE?

FEDS SAY SWITCHING BROWSERS IS ONE WAY TO DEAL WITH SECURITY THREATS.

THIS SUMMER the Department of Homeland Security's cybersecurity wing suggested that people use a different browser to deal with Internet Explorer's continuing security flaws. Could this be the beginning of the end for Microsoft's Web browser dominance?

Don't bet on it. Recently discovered flaws in the Mozilla browser illustrate that it is not immune to exploits (see "In Search of a Safer Browser," page 36). Also, Windows XP Service Pack 2 provides new protections against IE-specific attacks (IE's tight integration with Windows prevents you from uninstalling it, anyway). Still, with no end in sight to Web-based attacks, neither alternative—patching IE or switching to a non-Microsoft browser—is by itself sufficient to ensure online safety.

ART MANION of the Department of Homeland Security says that Internet Explorer's unique features increase its vulnerability.

POPULAR TARGET

IE'S SWAY IS impressive: In June, IE's global browser usage share was 95 percent, according to the Web analytics firm WebSideStory.

But that ubiquity has also subjected IE, and Microsoft, to sustained attacks from virus and worm writers and browser hijackers looking for the biggest returns. According to TruSecure Corporation Chief Strategist Russ Cooper, moving to another browser would provide only a temporary solution: "If people did switch en masse, the attackers would simply switch their target."

Still, market dominance is not the only reason for the Microsoft browser's disproportionate share of attacks. Art Manion, Internet security analyst for US-CERT, the operational arm of the National Cyber Security Division at the Department of Homeland Security, says IE's unique features increase its online vulnerability. Examples include IE's security zones; its support for scripted ActiveX controls and for scripts that let Web sites hide browser menus and toolbars; and Dynamic HTML support. "Other browsers simply do not have these features," Manion adds.

Microsoft continues to put out patches for newly discovered flaws. But after a flaw that had been previously repaired reappeared in a new patch, US-CERT issued a vulnerability note recommending that Web users might want to consider a different browser. Around the same time, in early July, WebSideStory reported that for the first time in years, IE's market share had dropped by a percentage point, to 94 percent.

IE's preeminence is unlikely to decline significantly, however. Despite long-standing efforts by Web-standards organizations, many companies continue to employ Microsoft-proprietary scripting and HTML extensions that make their sites fully functional only when viewed using Internet Explorer. And even when you do set up a different default browser, some features of Windows—including the cru-

IN BRIEF

Product Pipeline

CAN'T WAIT! A new wireless networking standard, 802.11n, will be at least twice as fast as 802.11g, with throughput speeds of at least 100 megabits per second. It's also expected to cover twice as much area as 802.11g, be backward compatible with 802.11b and 11g, and maintain its speed in a mixed network. The standard hasn't been ratified yet, but Belkin's Wireless Pre-N Router ($180) and Network Card ($130), due this fall, promise 802.11n's benefits. find.pcworld.com/43866

ROCK ON AND ON: Two just-out hard-drive-based digital music players promise 20 hours or more of battery life. Creative's $270 Zen Touch (above) lets you navigate your 20GB of music by moving your thumb along its new touchpad (find.pcworld.com/43868). Rio's slim $249 Carbon holds 5GB of music and includes a microphone for recording memos (find.pcworld.com/43870).

PHOTOGRAPH: DAVID ASCHKENAS

HOT COOL

It's hot and cool at the same time.
The Xerox Phaser® 8400 is the fastest color printer in the world for under $1000.*
There's a new way to look at it.

Sizzling performance. Refreshing price. Not only does the Xerox Phaser 8400 deliver 24 pages per minute in black and white, but it produces brilliant color prints at the same dazzling speed. For under $1000! Color is consistently clear and vivid, print after print. Your first page out is an industry-leading 6 seconds. And when it comes to convenience, nothing is cooler than the Phaser 8400's unique and reliable solid-ink technology which makes changing our ink simple, and clean. For more about our full line of Xerox network printers, digital copiers and multi-function systems, just call us or visit our website today. Our whole line is cool and hot.

Learn more: xerox.com/office/1964 Or call: 1-877-362-6567 ext. 1964

THE DOCUMENT COMPANY
XEROX®

* Based on manufacturers rated speed and estimated retail price
© 2004 XEROX CORPORATION All rights reserved XEROX,® The Document Company,® Phaser and There's a new way to look at it are trademarks of XEROX CORPORATION

cial Windows Update patch mechanism, Windows Messenger, and Outlook Express —invoke IE regardless of your default browser choice.

OTHER STEPS

DESPITE REPORTS to the contrary, US-CERT hasn't recommended dropping Internet Explorer as the only—or even the best—way to combat online threats. "US-CERT does not recommend one specific browser or software product over another," states US-CERT's Manion.

Instead, the US-CERT vulnerability note (find.pcworld.com/43840) suggests dumping IE as the last of several strategies for handling a flaw in which a Web page in the Internet Zone (where IE invokes a number of safeguards against attacks) can trick IE into running JavaScript code in the much-less-secure Local Machine Zone, where programs are assumed to be known to the computer user.

Other measures that US-CERT recommends include disabling Active scripting (which encompasses JavaScript) and ActiveX controls in both the Internet and Local Machine zones; applying security updates for Microsoft Outlook; sending and receiving mail using the script-proof plain-text format; using an updated antivirus program; and avoiding links embedded in unsolicited e-mail, instant messages, or Web forums (see August's *Internet Tips*, find.pcworld.com/43842).

Even when the US-CERT vulnerability note finally suggests using a different browser, it says that doing so may prevent Web users from using all of the features of key Web sites. The solution isn't bailing out of IE, according to TruSecure's Cooper, adding that doing so would be like "stamping out a flea on your back with a tractor trailer." Both he and Manion instead recommend simply adding known, legitimate sites to IE's Trusted Zone after tightening security in the Internet and Local Machine zones.

> Concerns about IE's flaws may further decrease as users install Windows XP Service Pack 2.

Concerns about IE's flaws may further decrease as users install Windows XP Service Pack 2, which became available in early August (see find.pcworld.com/43844). Cooper, for example, particularly lauds SP2 for incorporating new IE features that protect users from attempts to invoke or install malicious software via a Web page. Manion likes the way SP2 prevents Web sites from altering IE's interface—for example, by hiding address and status bars that show the real name of a Web page, which allows perpetrators of phishing attacks to make their pages look much more believable. (*Phishing* is the use of realistic-looking Web pages or e-mail messages purportedly from banks or other financial institutions that request recipients to enter their user names and passwords, which then go directly to the attackers.)

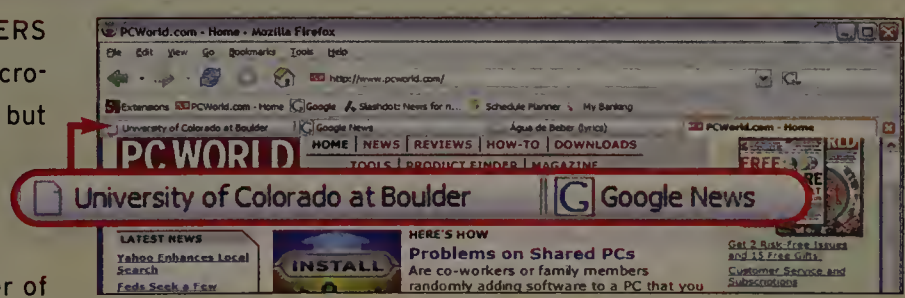
Still, Microsoft's new service pack is not a panacea. "I have no doubt that some sort of attack will be discovered that can work against IE after XP SP2," warns Cooper. But at the very least, he says, SP2's new safeguards will make the problem of not knowing that an attack has occurred "dramatically less likely—if not eliminating it entirely."

—*Scott Spanbauer*

WEB SECURITY

IN SEARCH OF A SAFER BROWSER

ALTERNATIVE BROWSERS MAY not soon eclipse Microsoft's Internet Explorer, but that doesn't mean they can't serve alongside or even replace it. US-CERT reports "a number of significant vulnerabilities in technologies relating to the IE domain/zone security model, the DHTML object model, MIME type determination, and ActiveX," and that "it is possible to reduce exposure to these vulnerabilities by using a different Web browser, especially when browsing untrusted sites."



RUNNING A TAB: Firefox's tabs lets you flip instantly between sites.

Using different browsers can also change the way you experience the Web. On the one hand, they can stop you in your tracks at Web sites engineered to work only with IE. But on the other hand, you might be pleasantly surprised: Alternative browser features missing in IE include password managers and tabbed browser windows.

Rolf Assev, an executive vice president at Opera Software, says that safety concerns rather than new features drive users to the Opera browser: Reports of IE's security flaws have spurred a big increase both in free downloads and in sales. Downloads of the Mozilla Foundation's Mozilla and Firefox browsers have also spiked.

Using a non-Microsoft browser doesn't assure security. Hackers recently exploited flaws—since patched—in both Opera and Mozilla (as well as in the Netscape browser derived from the latter). Still, the fact that these browsers suffer far fewer attacks than IE could make them look like safe harbors, even if only for a little while.

2004 visa U.S.A., Inc.

I want to be
paid as fast as my business moves.

There's nothing more frustrating than trying to get your company's cash flow to catch up with day-to-day operating expenses. Fortunately, when you accept Visa®, your days of waiting for payments to arrive will become a thing of the past. You'll receive payments quickly and securely. So you can spend less time and money handling paperwork and tracking down payments. And best of all, as more and more customers choose businesses that accept Visa payment cards in lieu of cash or checks, it'll help you meet increasing customer demand; something every company can appreciate. For more information, contact us at **GetPaidFaster@visa.com**

It's everywhere you want your company to be. VISA

FUTURE TECH

Building a Global Phone

WHEN TRAVEL TAKES you outside of the United States, technological incompatibilities can render devices like your cell phone useless. Now a company by the name of Vanu is using technology called Software Defined Radio to try to change that.

All current radio technology—including standard radio, wireless Internet connections, and cellular connections—is hardware-based. The hardware defines the function of a device, whether it's an FM radio or a CDMA or GSM cell phone. With software-based radio, instead of having one cell phone that uses a GSM network and another that requires a CDMA network, you could have one handset with built-in software that lets you connect to both networks.

Vanu has demonstrated the technology with a prototype IPaq handheld. In addition to displaying screen icons for standard software, the unit also features icons that the company uses to launch analog FM radio (the standard commonly used for walkie-talkies) and P25, a digital FM standard used by emergency-responder radios. CDMA and GSM calling could be added in the future. The result is a more useful cell phone that you could operate on any cellular network anywhere. Consumer use of the technology is likely about five years away.

—*Liane Cassavoy*

HEADS UP

7 Megapixels Under $600

STORES SHOULD BE STOCKING the next photographic fancy by the time you read this: 7-megapixel digital cameras. In the midrange, for instance, Sony will ship its 1-inch-thick Cyber-shot DSC-P150, a 7.2-megapixel camera that includes a 3X optical zoom lens and a 1.8-inch LCD screen. It captures images at a resolution of 3072 by 2304 pixels, which should be good enough to print 8-by-10-inch enlargements at 300 dots per inch. Expect to pay less than $500. Canon's comparable 7-megapixel PowerShot S70 comes with a 28mm to 100mm, 3.6X wide-angle optical zoom lens so that you can get everyone in the photo. The $599 S70 also has 13 shooting modes (including enhanced VGA movie mode) and an optional wireless controller. *—Anne B. McDonald*

THREE MINUTES

A Vision for Portable High-Def

MARK CUBAN, AN EARLY Internet millionaire, founded HDNet, the first national network to broadcast entirely in the 1080i high-definition TV format. He also owns the Dallas Mavericks, and is slated to star in the ABC fall reality show The Benefactor.

What is HDNet?

HDNet is kind of a USA- or TNT- or TBS-type network that has a wide variety of content. On HDNetMovies, we take movies that were either shot in high-def or were shot in 35 millimeter that we think are good, and put them out there.

What computing devices are you currently using?

I have two Sony VAIO laptops in front of me. One is a backup; one is a backup for a backup. Then I have a D-Link access point. I've got an old Snap Quantum drive. I've got a removable 80GB drive that I also use as a backup. You can tell I get kind of freaky about backups. I just bought a new HP Media Center PC M1090n, with the removable 160GB drive. I bought it to do some testing, because I want to be able to take HDNet content and see if we can distribute it on these removable drives—just jump past DVD.

You mean distribute high-def content on removable drives, not on next-generation DVD technologies HD-DVD and Blu-ray?

Hard drives are far more efficient and more capable of storing future content than HD-DVD or Blu-ray. No question that those discs right now are smaller—physically—but they top out at a 50GB capacity. Drives don't have such limitations. They are increasing in storage and decreasing in size and price. Heck, it's not inconceivable that you could fit a 2-hour, high-definition movie on a small keychain drive within five years.

What will that mean to me as a viewer at home?

Well, hopefully you'll be able to buy or rent a hard drive with 5, 10, 20 movies on it. And you'll use your DVR, your PC, or your Media Center PC, and just through a FireWire port or a USB 2.0 port, you'll connect the hard drive [to load or view the movies]. *(Read Mark's blog at find.pcworld.com/43848. For a longer version of this interview, go to find.pcworld.com/43846.)*

—Liane Cassavoy ■

ILLUSTRATION: PETER HOEY; PHOTOGRAPH: DOUG HOPFER

Indulge yourself.

Add stylish ViewSonic® ViewMate® Desktop Collection accessories for the ultimate desktop.

You deserve the visual experience that's the professionals' choice. And now you can get this grand view for under a grand. ViewSonic's luxurious 20" VP201b has ultra-high 1600x1200 resolution not even found on smaller LCDs. So indulge yourself in the screen with sharper text and more brilliant color, in the size that means less scrolling and searching, and in the style designed with your comfort in mind, including tilt, swivel and height adjustments and a sleek ThinEdge™ bezel ideal for multi-screen arrays. All from ViewSonic, the #1 display brand in the US* for price/performance.

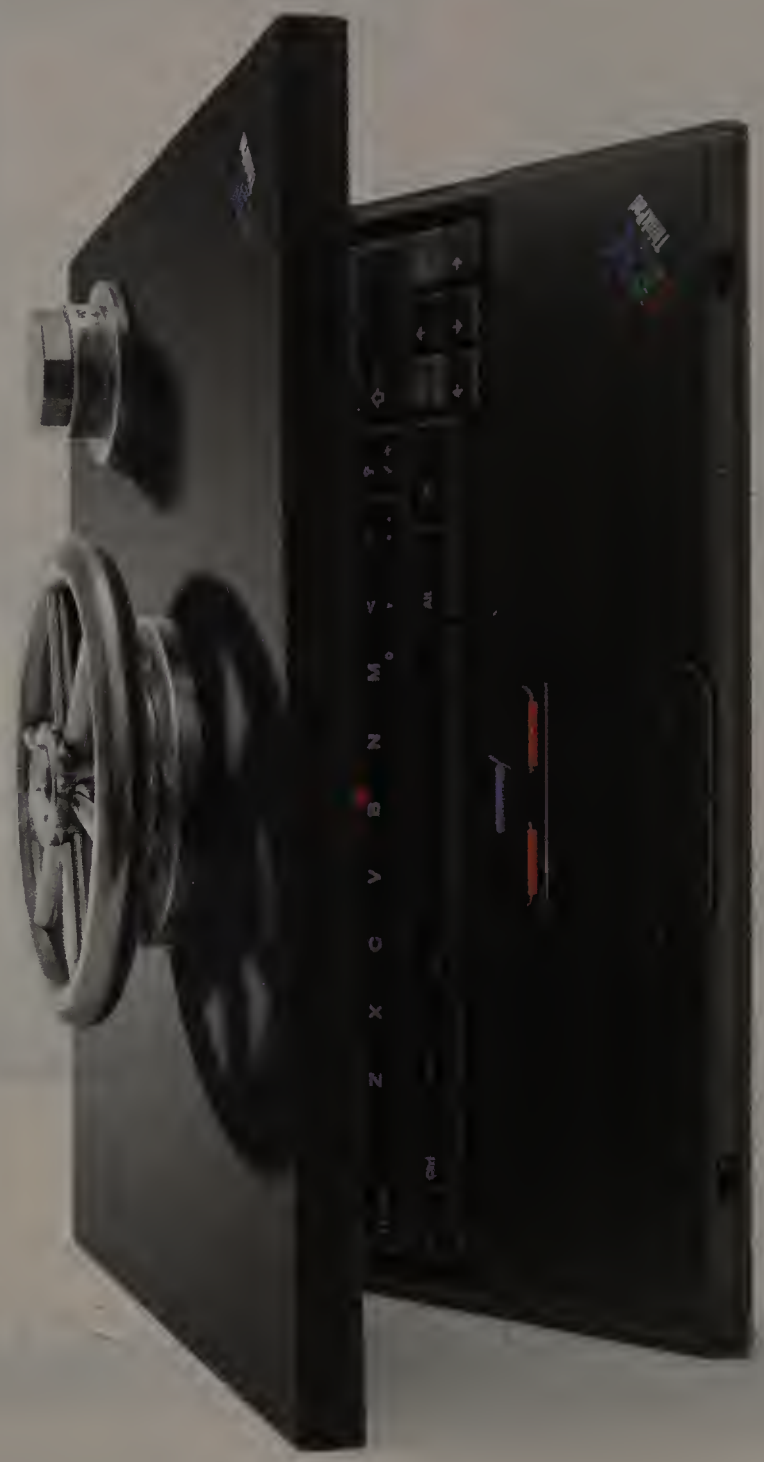
Find out **Where to Buy** at **ViewSonic.com** or call **800-888-8583**

ViewSonic®

*See ViewSonic.com for detailed awards list. Leading stand-alone, branded monitor by sales (CRT and LCDs combined, iSuppli/Stanford Resources Monitrak® and Flat Panel Monitrak,® 2Q04 report). Specifications, availability and pricing subject to change without notice.

Copyright © 2004 ViewSonic Corporation. All rights reserved. [12036-00E 07/04]

IBM recommends Microsoft® Windows® XP Professional.



IBM ThinkPad R Series

GO with IBM Think Express Program

IBM ThinkCentre models are designed, configured and priced with small to medium-size businesses in mind.

CNET Editors Choice Award, March, 2004
IBM ThinkPad X40

***Availability:** All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. ***Pricing:** does not include tax or shipping and is subject to change without notice. Reseller prices may vary. **Warranty:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. **Footnotes: (1) Embedded Security Subsystem:** requires software download. **(2) Mobile Processor:** Power management reduces processor speed when in battery mode. **(3) Wireless 11a, 11b and 11g:** based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b, 11b/g or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. **(4) Included software:** may differ from its retail version (if available) and may not include user manuals or all program functionality. License agreements may apply. **(5) Memory:** For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. **(6) Hard drive:** GB = billion bytes. Accessible capacity is less; up to 4GB is service partition. **(7) Wireless capability:** requires compatible wireless-enabled options, sold separately. **(8) Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges. **(9) ServicePac services:** are available for machines normally used for

Put a solid barrier between your wireless PC and thieves.

As the world's most secure wireless PCs, these IBM wireless ThinkPad® notebooks offer an added layer of data protection — a vaultlike combination of a built-in security chip and sophisticated data encryption software. In fact, it's so advanced, it actually makes data unreadable if tampered with. And only IBM offers PCs with this level of security as a standard feature. Plus, with Intel® Centrino™ Mobile Technology and on-the-fly folder encryption, users can work wherever they please, knowing that their data will be protected. No matter who's lurking around. To see a demo, go to **ibm.com**/shop/m503. Instead of a welcome mat.

Secure wireless. Only on a ThinkPad.

1 866 426-9541 | **ibm.com**/shop/m503

IBM ThinkPad R51
Ultimate Value

Distinctive IBM Innovations:
- IBM Embedded Security System 2.0[1] – Strongest security as a standard feature

System Features:
- Intel® Centrino™ Mobile Technology
  - Intel Pentium® M Processor 715 (1.50GHz)[2]
  - Intel PRO/Wireless Network Connection 802.11b/g[3]
- Microsoft Windows XP Professional[4]
- 14.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM[5]
- 30GB hard drive[6]
- Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength[7]
- 1-yr system/battery limited warranty[8]

NavCode 28838QU-M419
THINK EXPRESS MODEL PRICED AT: **$1,299***

ServicePac® Service Upgrade:[9]
3-yr Depot Repair #30L9192 **$132**

IBM ThinkPad X40
Our thinnest and lightest

Distinctive IBM Innovations:
- IBM Embedded Security System 2.0 – Strongest security as a standard feature
- NEW! IBM Rescue and Recovery™ with Rapid Restore™ – One-button recovery and restore solution

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor ULV 1GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 20GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard[10]
- Only .94" thin[11]
- 2.7-lb travel weight[12]
- 1-yr system/battery limited warranty[8]

NavCode 23861CU-M419
THINK EXPRESS MODEL PRICED AT: **$1,499**

business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. Service levels are response-time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. Calls must be received by 5pm local time in order to qualify for Next Business Day service. **(10) Full-size keyboard:** As defined by ISO/IEC 15412. **(11) Thinness:** may vary at certain points on the system. **(12) Travel weight:** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, Rapid Restore, Rescue and Recovery, ThinkPad, Ultrabay, UltraConnect and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. ©2004 IBM Corporation. All rights reserved.
Visit www.ibm.com/pc/satecomputing periodically for the latest information on safe and effective computing.

Take a look at some of our latest models. And get state-of-the-art security.

Why IBM ThinkPad Notebooks?

To make IBM ThinkPad™ notebooks even more valuable, each one featured here can give you the efficiency, productivity and edge you need and comes with all the following ThinkVantage™ Technologies:

IBM Active Protection System:

Butterfingers unite! These ThinkPad notebooks now include airbag-like technology to help protect your hard drive from some damage caused by drops and jolts.

NEW! Rescue and Recovery with Rapid Restore:

Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution

Access Connections:

Switch between wired and wireless connections.

Embedded Security Subsystem 2.0:[1]

Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private

Access IBM:

Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

IBM ThinkPad R51

System Features:

- Intel® Centrino™ Mobile Technology
  - Intel Pentium® M Processor 715 (1.50GHz)[2]
  - Intel PRO/Wireless Network Connection 802.11b/g[3]
- Microsoft Windows XP Professional[4]
- 15" SXGA+ TFT display (1400x1050)
- 256MB DDR SDRAM[5]
- 40GB hard drive[6]
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength[7]
- 1-yr system/battery limited warranty[8]

NavCode 1836H8U-M419

THINK EXPRESS MODEL PRICED AT: **$1,499***

With Microsoft Office Small Business Edition 2003:[9] $1,739

IBM ThinkPad T42

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 1.50GHz
  - Intel PRD/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 14.1" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- Only 1" thin,[10] 4.5-lb travel weight[11]
- 1-yr system/battery limited warranty[8]

NavCode 2378DTU-M419

THINK EXPRESS MODEL PRICED AT: **$1,549**

With Microsoft Office Small Business Edition 2003: $1,789

ServicePac® Service Upgrade:[12] 2-yr Onsite Repair/9x5/Next Business Day Response #30L9189 **$197**

IBM ThinkPad T42

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 735 (1.70GHz)
  - Intel PRD/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 14.1" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 1-yr system/battery limited warranty[8]

NavCode 2378FTU-M419

THINK EXPRESS MODEL PRICED AT: **$1,749**

With Microsoft Office Small Business Edition 2003: $1,989

ServicePac Service Upgrade: 4-yr Depot Repair #69P9195 **$249**

IBM ThinkPad T42

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 1.50GHz
  - Intel PRD/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Ultrabay Slim CD-RW/DVD-ROM Combo
- Only 1" thin, 5-lb travel weight
- 1-yr system/battery limited warranty[8]

NavCode 2378DWU-M419

THINK EXPRESS MODEL PRICED AT: **$1,649**

With Microsoft Office Small Business Edition 2003: $1,889

ServicePac Service Upgrade: 3-yr Depot Repair #30L9192 **$132**

IBM ThinkPad T42

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 735 (1.70GHz)
  - Intel PRD/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" SXGA+ TFT display (1400x1050)
- 64MB ATI Mobility RADEON 9600 graphics
- 512MB DDR SDRAM
- 60GB hard drive (7200 RPM)
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty[8]

NavCode 2379DXU-M419

THINK EXPRESS MODEL PRICED AT: **$2,399**

ServicePac Service Upgrade: 3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **$243**

IBM ThinkPad X40

IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook[13]

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRD/Wireless Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM fullsize keyboard[14]
- 7.5hr Li-Ion battery[15]
- 1-yr system/battery limited warranty[8]

NavCode 23866GU-M419

THINK EXPRESS MODEL PRICED AT: **$1,749**

ServicePac Service Upgrade: 3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **$243**

IBM ThinkPad X40 Solution Pack

IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook

System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRD/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 7.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty[8]

Accessories Included:

- ThinkPad X4 UltraBase Dock
- IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 23826UU-M419

THINK EXPRESS MODEL PRICED AT: **$2,199**

ServicePac Service Upgrade: 5-yr Onsite Repair/9x5/Next Business Day Response #69P9200 **$449**

NavCode® Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

***Availability:** All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. ***Pricing:** does not include tax or shipping and is subject to change without notice. Reseller prices may vary. **Warranty:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. **Footnotes: (1) Embedded security system:** requires software download. **(2) Mobile Processors:** Power management reduces processor speed when in battery mode. **(3) Wireless 11a, 11b and 11g:** based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b, 11b/g or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. **(4) Included software:** may differ from its retail version (if available) and may not include user manuals or all program functionality. License agreements may apply. **(5) Memory:** For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. **(6) Hard drive:** GB = billion bytes. Accessible capacity is less; up to 4GB is service partition. **(7) Wireless capability:** requires compatible wireless-enabled options, sold separately. **(8) Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges. **(9) Microsoft Office XP:** Certain Microsoft software product(s) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft's privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software product(s) or reconfigurations of the computer, and may be completed by

IBM recommends Microsoft® Windows® XP Professional.

(Monitor not included)

(Monitor not included)

(Monitor not included)

Why IBM ThinkCentre PCs?

Only IBM offers these features to protect your users, connect them, and keep them working. Each ThinkCentre™ desktop featured here can give them the efficiency, productivity and edge they need with the following ThinkVantage Technologies:

NEW! Rescue and Recovery with Rapid Restore:

Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access IBM:

Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of resources and assistance.

ImageUltra™ Builder:

Need to roll out new systems? Image and copy your operating system across your network in a flash. (Order separately)

IBM ThinkCentre A50

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3.0GHZ
- Microsoft Windows XP Professional
- 256MB DDR PC3200[5]
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite® Millennium license
- 1-yr parts limited warranty with 1-yr limited onsite service[17]

NavCode 814821U-M419

THINK EXPRESS MODEL PRICED AT: **$699**

IBM ThinkCentre A50

System Features:

- Intel Pentium 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Small form factor–62% smaller than a standard desktop[16]
- 256MB DDR PC2700
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 3-yr parts limited warranty with 1-yr limited onsite service[17]

NavCode 841943U-M419

THINK EXPRESS MODEL PRICED AT: **$799**

ServicePac Service Upgrade: 4-yr Onsite Repair/9x5/Next Business Day Response #69P9158 **$198**

IBM ThinkCentre A50

System Features:

- Intel Pentium 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- 256MB DDR PC3200
- 40GB hard drive • CR-RW
- Integrated 10/100 Ethernet
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 1-yr parts limited warranty with 1-yr limited onsite service[17]

NavCode 814822U-M419

THINK EXPRESS MODEL PRICED AT: **$749**

NEW! IBM ThinkCentre A50 Ultra small form factor

System Features:

- Intel Pentium 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Ultra small form factor–74% smaller than a standard desktop[16]
- 256MB DDR PC3200
- 40GB hard drive • DVD/CD-RW combo
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- Integrated 10/100 Ethernet
- 1-yr parts limited warranty with 1-yr limited onsite service[17]

NavCode 809022U-M419

THINK EXPRESS MODEL PRICED AT: **$849**

With Microsoft Office Small Business Edition 2003: $1,089

ServicePac Service Upgrade: 4-yr Onsite/9x5/4-hr Response #69P9162 **$250**

NEW! IBM ThinkCentre A51p

System Features:

- Intel Pentium 4 Processor 530 with HT Technology
  - Processor speed 3.0GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 512MB DDR2 PC3200
- 80GB hard drive • DVD/CD-RW combo
- Gigabit Ethernet-integrated
- 64MB ATI RADEON x300 Pro
- 1-yr parts limited warranty with 1-yr limited onsite service[17]

NavCode 842722U-M419

THINK EXPRESS MODEL PRICED AT: **$1,049**

With Microsoft Office Small Business Edition 2003: $1,289

ServicePac Service Upgrade: 3-yr Onsite/9x5/4-hr Response #41L2734 **$129**

intel inside centrino™ MOBILE TECHNOLOGY

IBM ThinkExpress Program:

We [illegible] designed and priced many of our products spec[illegible] for small and medium businesses. And best [illegible] all they're available di[illegible] t fr[illegible] IBM or through sel[illegible] IBM Business Partners.

IBM ThinkPad Accessories

Be kin Components Universal Notebook Travel Surge Protector #22P7127 **$20**

Targ[illegible] Deluxe Mobile E[illegible] #22P7437 **$60**

ThinkPad Carrying Case – L[illegible]her Attache #73P3600 **$129**

[illegible]hinkPad 72W AC/DC Combo Adap[illegible]r #22P9010 **$99**

ThinkPad Port Replicator I #74P6733 **$179**

IBM ThinkCentre Accessories

IBM 128MB USB 2.0 High-Speed Memory Key #22P9229 **$59**

Lexmark X5270 A[illegible]-n-One Printer #22P8808 **$140**

IBM ThinkVision [illegible] L150 15 Flat Panel Monitor [illegible]th system purcha[illegible] #W9SPAB1 **$379**

1 866 426-9541 | **ibm.com**/shop/m503

Internet or telephone (toll charges may apply). **(10) Thinness:** may vary at certain points on the system. **(11) Travel weight:** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. **(12) ServicePac services:** are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. Service levels are response-time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. Calls must be received by 5pm local time in order to qualify for Next Business Day Service. **(13) Battery life:** Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data, as of 1/29/2004. **(14) Full-size keyboard:** As defined by ISO/IEC 15412. **(15) Battery:** These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone® 2002 BatteryMark™ Version 1.0 Battery Rundown Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc.; neither Ziff Davis Media, Inc., nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at ibm.com/pc/ww/thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. **(16) Size claims:** are based on a comparison of chassis volume to the volume of IBM's standard desktop chassis. **(17) Systems with limited onsite service:** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. **(18) Certain IBM logo products:** are not manufactured, warranted or supported by IBM; IBM logos and trademarks used under license. Contact IBM for details Trademarks: The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, ImageUltra, Lotus, NavCode, Rapid Restore, Rescue and Recovery, SmartSuite, ThinkCentre, ThinkPad, ThinkVantage, ThinkVision, UltraConnect, UltraBase, Ultrabay and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved.

Visit www.ibm.com/pc/safecomputing periodically for the latest information on safe and effective computing.

small & medium business SOLUTIONS

3com

3Com Builds a Better Network, So You Can Build a Better Business

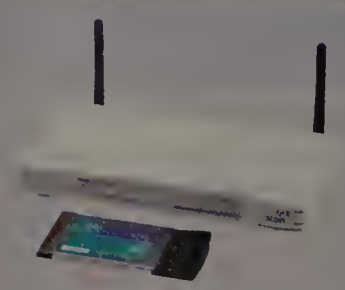
In today's competitive environment, successful businesses usually require high speed Internet connectivity with a robust IT network. 3Com® provides a complete suite of products for you to build your company's cost effective, powerful, professional network.

Your network is a business tool and you should rely upon an industry leader. Our wired and wireless solutions are easy to deploy, easy to secure, easy to use and they deliver the first class quality and performance you expect from 3Com.

With over 25 years of networking know-how incorporated into each and every product, 3Com lets you spend less time worrying about your network, and more time growing your business.

For more information, go to: www.3com.com/smallbusiness

EXERCISE CHOICE



3Com OfficeConnect® Wireless 11 a/b/g PC Card, 11g Gateway

3Com SuperStack® 3 Baseline Switches (Gigabit and Ethernet Switches)

Featuring

3Com SuperStack® 3 Switch 3870

Gigabit Workgroup Networking: Future-proof your network with a stackable Gigabit solution from 3Com. Affordable wirespeed "Gigabit to the desktop" switches deliver 10x greater performance than traditional 10/100. Grow your network to eight units high, or 384 Gigabit ports, with integrated 40Gbps resilient stacking. Its built-in 10Gbps expansion slot and Layer 3 aware hardware preserve flexibility in the future.

Save money now! Receive a 15% rebate on qualified 3Com purchases when you participate in 3Com's Trade-Up program.

"3Com has given us a practical voice and data system with extraordinary features and cost savings."

Bradley Mayer
Information Services Manager
City of Chaska, US

* For more information on 3Com's Trade-Up Program, go to www.3com.com/promotions.

Copyright © 2004 3Com Corporation. All rights reserved. 3Com, the 3Com logo, OfficeConnect, and SuperStack are registered trademarks of 3Com Corporation. All other product names may be trademarks or registered trademarks of their respective companies

LETTERS

LETTERS@PCWORLD.COM

RECOVERING A LOST HANDHELD

WATCH STATEMENTS FOR ONLINE FEES

WORDPERFECT DEFENDED

PC MYTHS—ARE THEY OR AREN'T THEY?

YOUR ITEM ON cell phone and electronics usage on aircraft ["Busting the Biggest PC Myths," August] is not entirely correct. As a professional airline pilot, I have experienced interference attributed to electronic device usage in the cabin, which could have (under different weather conditions) caused a disaster. Fortunately the outcome was a safe landing. Technology changes rapidly, and every combination of radio frequency interference patterns cannot possibly be tested. Passengers who think they "know better" could cause hazardous situations.

Dave Meyer, Ramstein, Germany

THE FEDERAL Communications Commission (not the Federal Aviation Administration) requires that cell phones not be used in flight, as they would create co-channel interference with other users. A cell phone used while airborne could cause interference with many conversations.

Rich Stewart, Annapolis, Maryland

Editor's response: As we should have made clear, the FCC does indeed prohibit the use of cell phones on flights once the plane is airborne, while ground use is allowed by the FAA. *—Grace Aquino*

YOU SAY IT'S a myth that "Terrible things happen if you turn off your PC without shutting down Windows." If, however, you turn off the computer without first spinning the hard drive heads down, the heads can crash into the disk, which can make the drive unusable. The kids at the school where I work frequently turn off the PCs whenever they like by holding down the power button or unplugging the power cord; as a result, out of 250 PCs, we have had to replace 20 hard drives in the last nine months. (And all of our systems are less than two years old.)

David Bailey

Kenton, Newcastle, United Kingdom

YOU SAY, "DOS is dead," but you can still get new DOS licenses (PC-DOS, not MS-DOS). I work for a company that refurbishes used IBM computers. For every functional machine we ship, we are required to include either Windows or a DOS Certificate of Entitlement. If a machine comes in with a customized or older version of Windows, neither of which we can load, then it gets a COE.

Jeffrey DeWitt, Garner, North Carolina

EXPERTS CAN DISAGREE

IN YOUR AUGUST issue your writers have created some confusion. In "Busting the Biggest PC Myths," author Gregg Keizer states that it is a myth that "Turning off your PC daily to save power shortens its life." The sidebar to *Hardware Tips* on page 154, "Four Tips for Longer PC Life," says to leave your PC running.

Wayne Staples, via the Internet

Editor's response: Our myths article states, "There's no definitive answer," though we tried to report what seems to be the consensus of the experts. Kirk Steers's column notes the difference of opinion. *—G.A.*

MORE FREE SOFTWARE

YOUR ARTICLE "The Best Free Software" [August] touts the Google Deskbar while ignoring Dave's Quick Search Deskbar (www.dqsd.net). This program has been around since well before Google's offering, it is quite well-regarded, and I've found it practically indispensable.

John Barone, Alexandria, Virginia

WITH WINDOWS XP, unless you shell out for the "Plus" pack, you have virtually no control over the XP style interface. One of the programs listed in the *PC World* Downloads area—Style XP 2.01—solves this issue for free; it provides access to literally hundreds of styles on its associ- ▶

LETTER OF THE MONTH

Spam King Is 'Part of the Problem'

IN THE AUGUST "Three Minutes" interview [*News and Trends*], so-called spam king Scott Richter was asked, "How do you react to people who challenge your business from an ethical standpoint?" He answered: "There are a lot of people who have a lot of time on their hands. I wish those people would take all that time and help find a cure for cancer, help puppies at the shelter, clean up the highways." Well, Mr. Richter, those people who actually want to do the things you talk about are probably sitting at their home or office, hour after hour, sorting your 100 million e-mail messages a day, and maybe that is why those things are not being done. You are a part of the problem!

Guy Antebi, via the Internet

PHOTOGRAPH: RICK RIZNER

SAVE
YOUR COPIES OF
PC WORLD

Organize and protect your copies of *PC World*. Slipcases are designed to hold more than a years worth of issues and are ideal for protecting and organizing your valuable copies. Attractive and durable, each slipcase is covered with a blue, leather-like material. A custom label decorated in silver with the *PC World* logo is included for personalizing. Great for Gifts! SATISFACTION GUARANTEED!

ONE $15.00
THREE $40.00
SIX $80.00

ORDER ONLINE AT
www.tncenterprises.net/pcw.html

Or, mail your order to: TNC Enterprises Dept. PCW, P.O. Box 2475, Warminster, PA 18974. Enclose name address and payment with your order No P.O. Boxes Please) Add $3.50 per case for postage and handling. Credit Card Orders: AmEx, Visa, MC. Send name, number and expiration date. Phone Orders: Call 215-674-8476. USA Orders Only PA Residents add 6% sales tax.

ated Web site and to any other themes, styles, boot screens, and log-ins that you can find around the Net.

Lawrence Hults, Lincoln, Nebraska

INK COSTS

THE AUGUST article "Ink Costs Compared: The Frugal and the Spendthrifts" [the sidebar, on page 96, to "Printers for Every Purpose"] ignores one important point: HP has made it impossible for others to clone their ink cartridges; other companies have not—making their printers cheaper to operate. Third-party ink cartridges for Canon printers—which work fine—cost one-fourth the price of cartridges refurbished by HP.

Hank Friedman, El Cerrito, California

LABEL YOUR HANDHELD

"KEEP YOUR HANDS on Your Handhelds" [*Consumer Watch*, August] missed one good method for recovering a handheld: With a label maker, type "REWARD IF FOUND—CALL *xxx/xxx-xxxx*." Never rely on just the ID screen—the battery may die long before the unit is found.

Bob McKinley, Washington, DC

WATCH YOUR CHARGES

THANKS FOR the story on Simple Escapes and MemberWorks ["Fees Surprise Unwary Web Shoppers," *News and Trends*, August]. I spotted their charge on a long-unused credit card, spent hours doing research on the Internet and more on the phone with MemberWorks and my issuing bank, and had the charge reversed.

Lyn Ian, via the Internet

IN DEFENSE OF WORDPERFECT

YOUR REVIEW OF WordPerfect Office 12 [*New Products*, August] merely considers it to be mimicking Microsoft Office at a lower price. I bought the OEM version of WordPerfect Office 11 with my PC because I considered WordPerfect to be a better word processor than Word. The upgrade to version 12 was a no-brainer.

Charles Chapman, London, Ontario, Canada

PC World *welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com.* ■

Jeannie celebrates as she
Elevates to new heights.

We're More Than Just a Cart Company. You may know us as the company with those "3 hefty guys on a cart". And you'd be right — we've spent 20 years making really strong carts, all with a Lifetime Warranty. But now we also have furniture like rack enclosures, electric lift tables, and work benches. So the next time you need a good furniture solution for your technology needs, contact us at **anthro.com** or **800.325.3841**. The hefty guys are still around, but there's so much more!

ANTHRO®

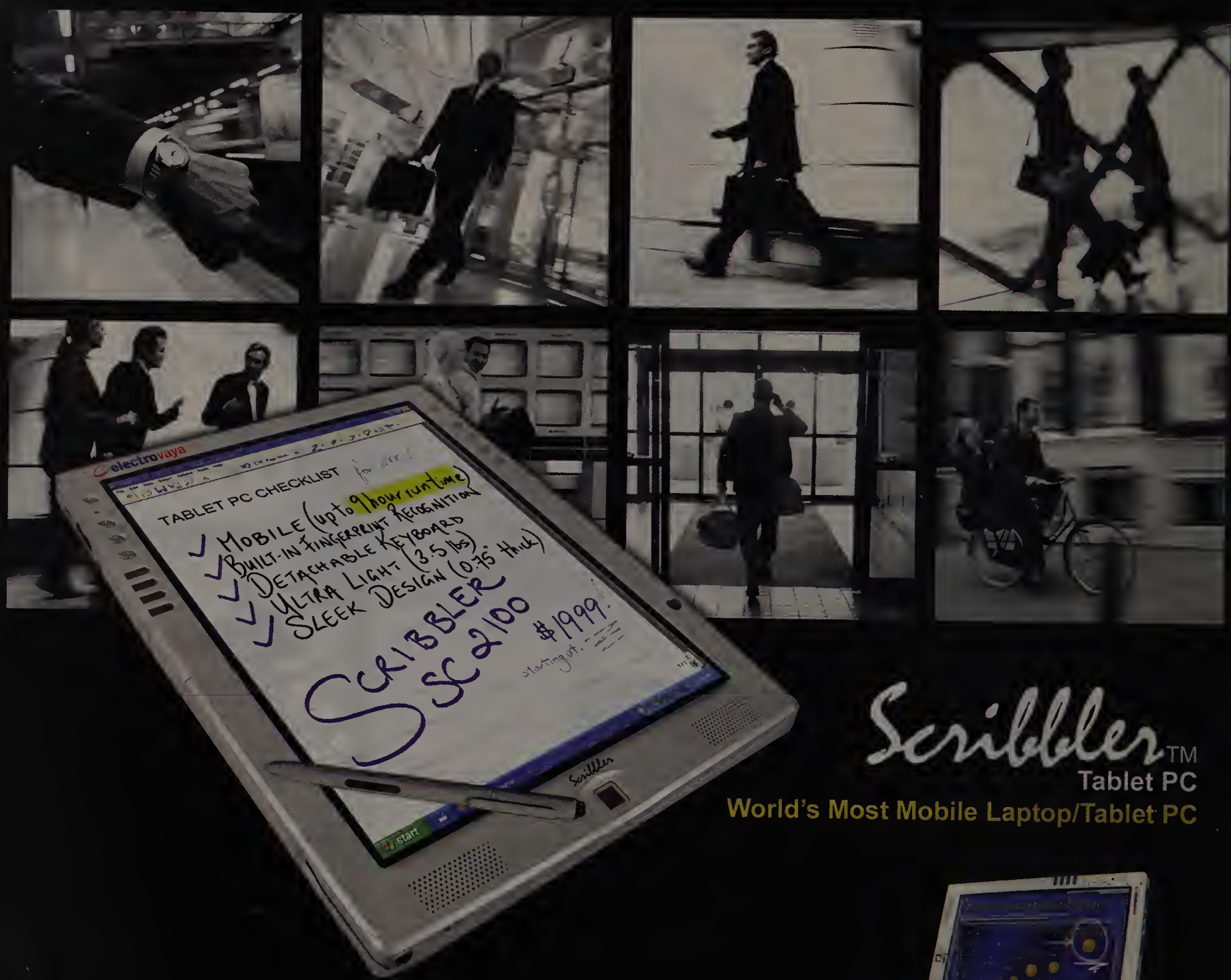
Technology Furniture®

– Fast & Friendly!

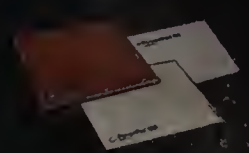
Educational discounts available and OEM applications. GSA contract.

EXPERIENCE TRUE MOBILITY

Unique 75Wh SuperPolymer® Battery 9 Hour Run Time



Scribbler™
Tablet PC
World's Most Mobile Laptop/Tablet PC



PowerPad®

Extend Laptop Mobility by attaching the PowerPad: an external battery

PowerPad® 160	*12-16hrs*
PowerPad® 120	*8-12hrs*
PowerPad® 80	*6-8hrs*

SC 2100 Series Starting at $1999

- 75Wh SuperPolymer® Battery
- Intel® Centrino 1.3 GHz ULV Pentium M
- Fingerprint Recognition
- Detachable Keyboard with Touchpad
- Built-in Ambient Light Sensor
- Large 12.1" Display
- Bundled Software Pack
- Built-in WIFI 802.11b/g
- Built-in Ethernet/Modem
- Microphone Array System
- 256/768 MB RAM (upgradeable)
- 20/60 GB Hard Drive (upgradeable)
- Ultra Light (3.5 lbs)
- Sleek (0.75" thick)

PC WORLD
"...battery life of 9 hrs...unprecedented ...blows away what's available today"

LAPTOP
"Thin Light and out of sight"

NASA
Electrovaya powers NASA Astronauts

Our unique 300km Zero Emission SUV

Windows

electrovaya
www.electrovaya.com
Tel: 1 800 388 2865

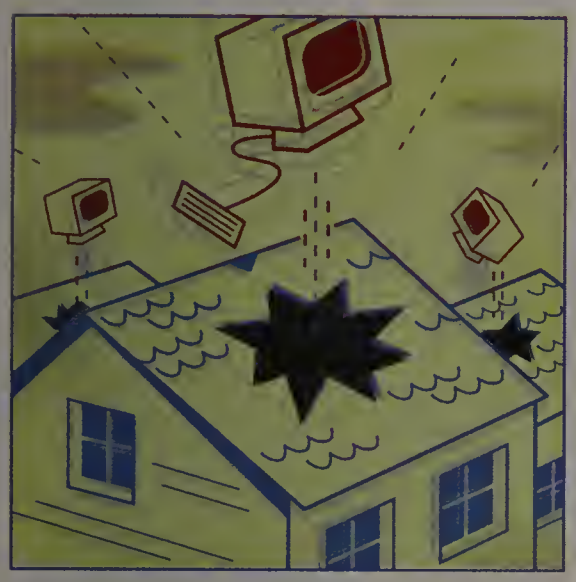
Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Centrino is a trademark or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. All other companies and product names are registered trademarks of their organizations in the United States and/or other countries. All specifications, software and their availability are subject to change. All rights are reserved. Scribbler is a trademark of Electrovaya Inc.
Battery life may vary depending on product model, configuration, applications, power management settings and features utilized. After a period of time the battery will lose its ability to perform at maximum capacity and will need to be [illegible] for all batteries. The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification and are not in part or total to be construed as constituting a warranty [illegible] assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a licence.

PLUGGED IN

STEVE FOX

Cheap, Incredibly Fast Net Access

Plus: Cell phone clubs, a store in your OS, and free streaming audio.



1 Really Broad Broadband

The Buzz: If you're one of the lucky ones, you'll soon be able to cruise the Web at 5 megabits per second for about $40 a month. There's a catch, of course. Verizon's Fios program—which runs honest-to-goodness fiber-optic cable right to your doorstep—is currently available only in Keller, Texas, with a couple more cities due to come online by the end of the year. Verizon will also offer a 15-mbps fiber-optic package (five to ten times faster than cable or DSL) for $50, or $45 if you have Verizon phone service, and a 30-mbps version for a price yet to be determined.

Bottom Line: Like the doctor says, fiber is good for you. Too bad it's so hard to get.

2 Phone-Side Chats

The Buzz: Man is a social animal with opposable thumbs, which explains the burgeoning popularity of SMS (short message service) clubs composed of mobile citizens who share common interests and a passion for cell phone "texting." San Diego–based SMS.ac—which boasts 10 million–plus members in some 200 countries—has more than 100,000 user-created clubs, from MJTurkFan ("Michael Jackson's Turkish Die-Hard Fans") to Nike World. Sending an SMS note is free, but for receiving messages club members are charged a small fee, which SMS.ac shares with the club's founder.

Bottom Line: It isn't all fun and games. Say you've missed work or blown off a meeting. Just SMS a plea to the Alibi and Excuse Club, and a stranger will intercede (as in, lie) on your behalf. Handy!

3 Windows Shopping

The Buzz: Microsoft is readying Windows Marketplace, a site that will point shoppers toward Windows-compatible hardware, software, and downloads. Accessible via the XP Start menu, an Internet Explorer button (added via Windows updates), and third-party sites, Marketplace will feature "a really big tent" of merchants, says Windows XP product manager Tracy Overby. Multiple partners are promised, though at press time only CNet (which brings Download.com and a passel of e-tailers to the party) has been announced. It isn't yet clear how Microsoft will make money from this, though history suggests it'll find a way to profit.

Bottom Line: Hmm.... I wonder if you'll be able to buy the Windows version of Monopoly on the Marketplace site.

4 Free Music Streams

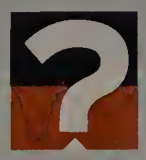
The Buzz: An intriguing new model for music sharing, Mercora transforms its members into broadcasters who can stream any song in their library to others using Mercora's peer-to-peer network. Members can create groups and specify who gets to hear their music. But all listening is live: There's no downloading permitted. In the spirit of P-to-P, members can't listen in unless they make their own content available for sharing.

Bottom Line: Mercora pays a licensing fee to the record industry. In other words, it's legal. Look, Ma, no lawsuits. ■

Contributing Editor Steve Fox covers buzz-worthy products, ideas, and trends. Contact him at steve_fox@pcworld.com. Visit find.pcworld.com/31643 for more Plugged In.

NAGGING QUESTION

Why Is It Called Beta Software?



THE SECOND letter of the Greek alphabet, *beta* signals the second item in a series. In the world of prerelease software, an "alpha" is the first iteration—a program undergoing in-house testing. When an alpha graduates to beta, intrepid customers get to try it out. Most software passes through multiple beta stages and then "release candidates." The final version is often referred to as GA (for "general availability") or "gold code"—an overly optimistic moniker, given the inevitable bug fixes and service packs that follow.

ILLUSTRATION: HARRY CAMPBELL

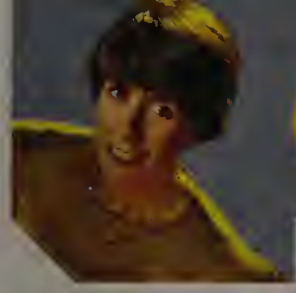
WE'VE GOT YOU COVERED.

LACIE WORK HARD DRIVE | LACIE HARD DRIVE | LACIE DVD±RW 16X DRIVE WITH DOUBLE LAYER TECHNOLOGY

THE LACIE FAMILY OF DRIVES, DESIGN BY F.A. PORSCHE, LOOKS GOOD AND WORKS HARD. BLENDING THE LATEST TECHNOLOGIES WITH AWARD-WINNING DESIGN, WE'VE GOT YOUR DIGITAL STORAGE NEEDS COVERED. TRANSPORT, STORE AND BURN FILES, DVDS, MP3S OR WHATEVER, IN STYLE. WWW.LACIE.COM

LACIE

DESIGN BY F.A.PORSCHE



CONSUMER WATCH

ANNE KANDRA

HOW TO AVOID WEB BUYING ANNOYANCES

PRIVACY WATCH: WHO'S STAKING OUT YOUR INBOX?

ON YOUR SIDE: MP3 FILES IN LIMBO

Web Shopping: A Cart Full of Frustration

Buying online should be simple and pleasant. Here's how to end the hassles.

ILLUSTRATION: MICK WIGGINS

NO SPECIAL ISSUE on technology annoyances would be complete without a discussion of the superstore of struggles and the database of difficulties that online shopping sometimes becomes. So here are half a dozen common (and aggravating) glitches that continue to bedevil e-commerce, along with some suggestions for avoiding them in the future.

CHEAPER TO KEEP IT

GOT A GRIPE concerning the goods you bought? Unless you have indisputable proof that the glitch is the retailer's fault, you can count on picking up the tab for return shipping (and often, the cost of insurance as well). This expense can add up fast, especially for heavy items such as computers and appliances. In fact, the cost of returning the item may be steep enough in some cases to convince you to settle for an item that's less than satisfactory.

Your best bet is to make sure at the outset that the item you order is exactly what you want, and then read the return policy carefully. You might also consider purchasing from a Web site that has a physical store nearby, but only if you're sure that the store will accept returns on items ordered online. (For electronics, don't forget to check for restocking fees, which may add 15 percent or more to your tab.)

REBATE ROULETTE

WHAT IS IT about rebates that brings out the cheapskate technophobe in companies? Setting up a simple form that consumers could fill out and submit online ought to be a no-brainer for these Web geniuses. But even at sites like Rebateplace.com that are dedicated to the black art of rebate tracking, you'll find only downloadable PDF files that you have to print, fill out, and (gasp!) physically drop in a mailbox. If I didn't know better, I might suspect that companies aren't interested in making rebates easier to get.

ACCOUNT FOR THIS

WHEN WAS THE last time you had to create a special account with a supermarket just to buy a gallon of milk?

That's what I thought. So why do so many shopping sites insist on trying to start a long-term relationship when all you want to do is buy a printer cartridge?

As far as I'm concerned, a good shopping site should treat customers like a well-mannered first date: First you spend some quality time together. And then, if things work out, the two of you can take it to the next level and start choosing log-in names, passwords, and preferences.

BREAKING UP IS HARD TO DO

SPEAKING OF commitment, music fans might recognize this tactic, which some Web-based services use to lure folks into an LTR: The site offers a short-term, ▶

no-strings-attached free trial subscription.

But if you decide to end the relationship after the trial period—or even after you've subscribed for a while—things can get dicey. Some online services (especially ones that already have your credit card number) seem to guard the secret of how to cancel a subscription as if it were a nuclear-missile launch code.

So the next time you're tempted to check out some new music site or other online service, don't hook up until you know how to break up. Look for direct contacts to customer service and clear, concise billing policies; and be wary of sites that are long on promises but short on details. And to all the Web services that just can't seem to take no for an answer: It's not you, it's us, okay? Give up and move on.

BARGAINS THAT AREN'T

THERE'S NOTHING like the thrill of finding a hot piece of gear, a rare CD, or a fancy software application on sale at a rock-bottom price. Congratulating yourself on your online shopping savvy, you hustle it into your shopping cart and jubilantly click the checkout button. But when the site recalculates your total charges, that bargain-basement price suddenly doesn't look like such a bargain anymore.

It's those sneaky shipping and handling costs again. Just when you think you've snagged a steal, the site tacks on costs that are steep enough to send the package via Tahiti on a first-class plane ticket.

Don't get taken in. Before you seal any deal, compare the cost of the item plus shipping at three or four different sites. The sites that engage in this practice presumably hope that customers can't—or won't—do the math. Does that sound like a company you want to do business with?

WHOSE SITE IS IT, ANYWAY?

IF YOU'VE EVER purchased electronics, tools, clothing, food, housewares, or anything else besides books or music from a certain online vendor whose name rhymes with "Shamazon," you may have experienced this one first-hand. You order a widget from your favorite retail megasite. A few days later it shows up, sent by some company you've never heard of.

Granted, this isn't a problem if your widget arrives in perfect condition. But what if it's DOA? That's when you'd ▶

PRIVACY WATCH

New Services That Peep Into Your Inbox

"YOU SENT ME AN E-MAIL? My spam filter must have zapped it."

Lots of us have used this line, and chances are that a few times, like when the message was a bunch of lame jokes from Uncle Morty, it wasn't the absolute truth. But the excuse won't work anymore if Uncle Morty starts using one of the new services that track whether you got an e-mail and what you did with it.

These services, from MsgTag (www.msgtag.com, $20 with a free trial) and DidTheyReadIt (www.didtheyreadit.com, $50 per year, with a free trial), insert a small piece of HTML code into outgoing messages. When the recipient opens the message in an HTML-compatible e-mail client such as Outlook or Outlook Express, or with a Web-based mail service like Hotmail, either service can track the message.

Both MsgTag and DidTheyReadIt can tell senders when the message was received and when it was opened. DidTheyReadIt goes a few steps further, allowing the sender to find out how long the message window was left open and whether a message was forwarded.

The purveyors of these services argue that there's a real need (beyond simple nosiness) for them. A certain percentage of legitimate messages do get caught in spam filters, and using return receipts won't always ensure that your missive gets through. "Most system [administrators] will turn off all return receipts by default, and some e-mail services, like Hotmail and Yahoo, don't allow return receipts at all," says Alex Rampell, CEO of Rampell Software, which sells the DidTheyReadIt service.

But does that concern justify empowering people to snoop into your e-mail reading habits? In some circumstances, these services could be downright dangerous. DidTheyReadIt grabs the IP address of the computer you use to open an e-mail message, and then uses that address to determine your location, right down to the city you're in. The service "gives you the location [of the recipient] and a link to MapQuest," Rampell says. Imagine how helpful this would be to a predatory adult who's in e-mail communication with a child.

If you want to protect your privacy, both services are fairly easy to defeat. The easiest solution is to disable the display of HTML content or of embedded graphics in your messages. Doing this will also prevent the majority of phishing e-mail messages from displaying properly; so in general, it's a sensible thing to do. The downside is that you won't be able to see any other images—including ones you might want to see—that are embedded in the body of messages. (Image files sent as e-mail attachments will still get through, however.)

For people who use Outlook (versions 2000 through 2003) and don't want to turn off HTML in mail messages, former Netscape programmer Mike Belshe has created a free program called NoSpyMail (www.belshe.com/nospymail) that can detect and block Web bug elements in messages without requiring you to turn off HTML in your e-mail client software.

To my mind, your inbox should be your own personal domain. Let's do what we can to keep it that way. *—Andrew Brandt*

ILLUSTRATION: MICK WIGGINS

Crash Eats MP3s

I USED A LAPTOP to edit lots of music files—family recordings, 78s, LPs, and tapes, all of which required hours of work. I didn't have room on my notebook hard drive, so I transferred the files to my RCA Lyra RD2840 MP3 player. After seven weeks, the Lyra died, taking my files with it. (I meant to make copies, but hadn't done so before the Lyra stopped working.) RCA offered to exchange the player, but retrieving my data is more important.

Kip Williams, Newport News, Virginia

***On Your Side* responds:** RCA's warranty policy is to exchange a broken device with a new one. But the company made an exception for Williams. "Our engineers disassembled it and found that an integrated circuit had burned out," says spokesperson Dave Arland. The good news: "The hard drive is intact and [RCA] will transfer it to a working Lyra player," Arland says. Our advice: Regardless of how new your storage device is, make sure that you back it up regularly.

—Grace Aquino

better start hoping that the sending company has as responsive a customer service department and as accommodating a return policy as the site that you thought you were buying from.

Note to big online shopping sites: If you're going to partner with every Tom, Dick, and Harry and David.com on the Web, make sure your customers understand that they're doing business with another company. And provide a clear link to that company's return policies and restrictions before checkout. ■

Anne Kandra is a contributing editor and Grace Aquino and Andrew Brandt are senior associate editors for PC World. *You can send them e-mail at consumerwatch@pcworld.com. If you would like to read previously published* Consumer Watch, Privacy Watch, *or* On Your Side *columns, visit find.pcworld.com/31703, find.pcworld.com/31706, or find.pcworld.com/31709, respectively.*

FREE ROLLOVER PLANNER CD-ROM

A free Rollover Planner CD-ROM from T. Rowe Price.

At T. Rowe Price, we think that understanding all your 401(k) rollover options before you invest is essential. Our new Rollover Planner CD-ROM will guide you through your decisions using interactive tools and interviews with T. Rowe Price investment experts. They'll discuss topics like why you should roll over and how to think about investing your money. You'll even find answers to questions like what to do if you've received a check from your old 401(k) or how to handle company stock.

Call our Rollover Specialists to get your free Rollover Planner CD-ROM. They can answer your questions or even start the rollover process right over the phone.

Get the latest perspectives on:

- The best ways to minimize taxes and avoid penalties
- Finding the right investment firm
- Deciding how to invest your retirement savings
- Understanding fees and expenses

TROWEPRICE.COM/ROLLOVER
1-877-472-0994

T.RowePrice®
INVEST WITH CONFIDENCE

T. Rowe Price Investment Services, Inc.

IRAR070065

FREE* DELL™ NOTEBOOK

WITH THE UPFRONT REWARDS™ VISA®

This Notebook will be yours!*

Dell™ Inspiron™ 1000

Credit line up to $15,000

Low 9.99%* variable APR
APR may vary

No annual fee

No balance transfer fees
on initial transfers

And a FREE* Dell PC today!

FREE* DELL™ NOTEBOOK! with the Upfront Rewards™ Visa® Platinum

If you carry a credit card and a balance, you could get a FREE Dell notebook computer – an Upfront Reward™ for purchases you've already made. It's that easy to grab your Dell Inspiron™ 1000 Notebook with the Upfront Rewards™ Visa® Platinum card. No waiting for points, no high "go-to" rates, no measly annual bonuses – this notebook is yours with qualifying balance transfer.* AMAZING!

Hurry... FREE* Dell Notebooks won't last!

Visit www.4myfreedell.com

or call 1-888-728-3037, mention keyword: WORLD

*Subject to credit approval. Logon or call for Terms & Conditions.

The Upfront Rewards™ Visa Platinum card is issued by Universal Savings Bank, F.A.
Visa® is a registered trademark of Visa USA.

Dell, the Dell logo and Inspiron are trademarks of Dell Inc. (Not a Dell offer.)

STEVE BASS

11 Easy Ways to Keep a PC Up-to-Date

Get the latest on patches and upgrades for your hardware and software.

I'LL BET THAT YOU need something to worry about. Start with the latest rollout of ever more dangerous viruses and worms. Then wonder whether you have all the latest updates and hot fixes for your programs and devices. My strategy for staying one step ahead of the bad guys combines news feeds, alerts, online lists, and a few indispensable sites that deliver the information my PC can't live without.

Even with such snazzy new tools as instant messaging and RSS feeds (more about them later), I get most of my technology information the traditional way—via e-mail and by surfing the Web. Here are my au courant essentials.

First, make sure that you have Windows XP set to check for updates automatically (this feature isn't available in other versions of Windows, which you have to update manually). Right-click *My Computer* and choose *Properties•Automatic Updates.* Check *Keep my computer up to date.* (See this month's *Internet Tips* column on page 166 for more on Automatic Updates.) Under 'Settings', choose either to be notified when updates are available, so that you can download them yourself, or to have Windows download them automatically and alert you prior to installing them. (I skip the automatic installs because I want to know what Microsoft is up to.)

Until recently, Microsoft supplied a free CD containing all critical Windows updates through 2003. My guess is they'll do it again. Check find.pcworld.com/43200 for the availability of the CD. If Microsoft does send out the CD again, you'll have to wait two to four weeks for delivery.

And don't forget to download and install Windows XP's new Service Pack 2, which improves the OS's security.

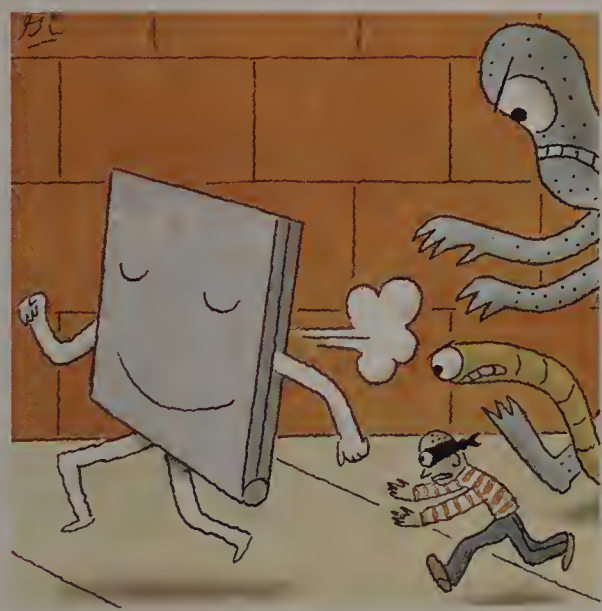


ILLUSTRATION: GREG CLARKE

To keep up with happenings in the Redmond Empire, I subscribe to KbAlertz (www.kbalertz.com), a free e-mail service from Scott Cate and Dave Wanta that covers important new Microsoft Knowledge Base articles. One of the service's recent alerts resolved a USB printing problem that had been plaguing me for months.

DOWNLOAD A BIG FIX

BIGFIX (free for consumers) checks my PC for bugs, security risks, and outdated software. Visit find.pcworld.com/43202 for the download. When you're asked during install whether you want BigFix to run every time you boot, say no. (Run the utility manually once a week.) After installing BigFix, open it and select *Go•Subscribe* to sign up for your version of Windows.

To keep my primary e-mail inbox from overflowing, I use a Web-based account for alerts and lists. (I'm lucky enough to have a Google Gmail account with 1GB of storage, but a Yahoo account with 100MB of storage would work, too.)

The hottest new technology for gathering information is RSS feeds (it stands for Really Simple Syndication, among other things). Instead of hunting down news and alerts yourself, you can subscribe to sites and services that send the data directly to you. The RSS format is easy to scan for critical headlines. And whereas my ISP's spam filter inadvertently blocks some e-mail lists, all of my RSS feeds get through to my inbox.

In order to use this technology, you must have an RSS reader. My favorite is FeedDemon, which also earned the Editor's Pick from last July's "News on Demand" roundup of RSS software (find.pcworld.com/43206). FeedDemon works very much like a program I'm already accustomed to—Internet Explorer. It comes with almost 180 RSS feeds presubscribed (because I was interested only in technology and news, I deleted almost half of the offerings). I love FeedDemon's Auto-discovery feature: If I browse to a Web page that has feeds, the program can quickly add them—no muss, no fuss. Unfortunately, FeedDemon costs $30, but it's worth it. Visit find.pcworld.com/43208 to download the trial version. Pluck RSS Reader (find.pcworld.com/43210) is a good, free alternative.

I'm interested in reading about upcoming products and those currently being tested. So I log on to WinBeta to see what is moving through Microsoft's product pipeline (www.winbeta.org). Also cool are BugBlog's RSS feeds (www.bjkresearch.com), which save me grief by telling me about software glitches and workarounds.

I gotta run. I just got an RSS feed from my wife, Judy, alerting me to the latest news: My dinner's getting cold. ■

Contributing Editor Steve Bass is the author of PC Annoyances, *published by O'Reilly. Contact him at homeoffice@pcworld.com.*

Dedicated Servers

$59/month

1 Terabyte Data Transfer

800.847.1983

ValueWeb by affinity

www.valueweb.com
800.847.1983

Your One-Stop Hosting Solution

Your servers are hosted in our Class A data center

- 4000 servers under management
- 24/7/365 Network, Plant and Access Security
- Four, carrier diverse OC 12 bandwidth circuits
- Telco class climate and power management

EXPAND YOUR CAPABILITIES

ValueWeb's set of Premium Services add fuctionality and features to your website, giving you the tools you need to help your business succeed.

create it! manage it! protect it! promote it!

Visit www.valueweb.com for detailed information.

STARTER	BASE	PRO
• Intel 1.7 GHz CPU • 512MB RAM • 80 GB IDE Hard Drive • 1000 GB Data Transfer	• Intel 2.4 GHz CPU • 1024MB RAM • 80 GB IDE Hard Drive • 1000 GB Data Transfer	• Intel PIV 2.8 GHz CPU • 1024MB RAM • 2x80 GB IDE Hard Drive • 1000 GB Data Transfer • **Macromedia Dreamweaver MX 2004 Included**
ValueWeb's Price	ValueWeb's Price	ValueWeb's Price
Linux $59/mo	Linux $99/mo	Linux $145/mo
Windows $89/mo	Windows $129/mo	Windows $175/mo
$99 setup	$99 setup	$99 setup

Hosting solutions built specifically for small business and web professionals.

affinity

BUGS & FIXES

STUART J. JOHNSTON

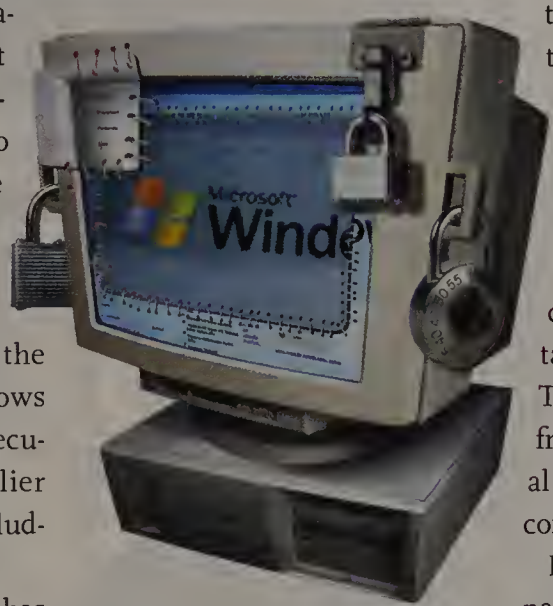
Security Holes Plague Windows Help

Patches for XP and 2000 are available now—but 98 and Me users must wait.

AS ITS NAME implies, the Windows HTML Help system is designed to help PC users by providing graphics, multimedia elements, and hyperlinks to additional information. But it turns out that attackers can use this system to help themselves to your files, and even to take control of your PC.

Two newly discovered security holes affect the HTML Help system and the Task Scheduler in Windows XP and 2000. The Help security bug also affects earlier versions of Windows, including 98, 98 SE, and Me.

Unfortunately, Microsoft has not yet finished developing patches for the older Windows versions and can't say when they'll be ready. When they are, the company says, users will be able to get the patches through Windows Update (find.pcworld.com/43704). One minor blessing: The older versions of the Windows operating system aren't susceptible to the Task Scheduler bug. (Task Scheduler allows users to set the times when specific jobs, such as system maintenance programs, will run.)



Before a malevolent cracker could exploit either security flaw, you would have to visit a Web site that hosted a malicious link, or click a link in an HTML e-mail that took you to the attacker's site. Like many security flaws in Microsoft products, these holes could be exploited by sending the system faulty or excessive information, causing the machine to malfunction. Then the attacker would transmit a program of his or her own to take control of your PC.

Microsoft designated the holes as "critical" because a cracker's successful assault could result in the complete takeover of your machine: The evildoer would then have free rein to steal your personal files or even to wipe out the contents of your hard disk.

Microsoft has now released patches for both flaws in Windows XP and 2000. If you use XP, I recommend getting Service Pack 2. Though the company hasn't yet posted patches for Windows 98 and Me systems, it has provided workarounds for both bugs.

So far, there have been no reports of attacks, but don't take any chances. Visit find.pcworld.com/43706 for the patches and for more technical details on the HTML Help flaw (numbered 840315), and go to find.pcworld.com/43708 to get the Task Scheduler fix (numbered 841873). Both fixes are included in SP2. ■

Stuart J. Johnston is a contributing editor for PC World. *Visit find.pcworld.com/31580 to see more* Bugs and Fixes *columns.*

INTERNET EXPLORER FIX BLOCKS NEW VIRUS

MICROSOFT'S CUMULATIVE PATCH for IE plugs three newly discovered security holes that it rates as "critical," including one that could result in something similar to a serious—but not widespread—virus attack launched this past July that is known as the "download.ject" or "Scob" virus (see find.pcworld.com/43820 for more); the attack involves logging a user's keystrokes.

The patch aims to head off recurrences of that incident, which exploited weaknesses in Windows and in Microsoft's Web server software. The update also contains previously released patches for IE, fixing flaws in Windows XP and 2000—but not 98 and Me yet. Get the patch (numbered 867801) at find.pcworld.com/43822.

IN BRIEF

Dell Adapter Recall

DELL IS RECALLING 28,000 power adapters for some Latitude and Inspiron notebooks. It is possible to plug the wrong power cord into the adapters, posing a shock hazard. Go to find.pcworld.com/43714 for information about a free retrofit kit.

Mozilla Patch

A NEW PATCH FIXES a flaw discovered in the protocol handling functions of Firefox, Thunderbird, and the Mozilla Application Suite. The bug affects only Mozilla browsers on Windows PCs—not those on Linux PCs or Macs. The fixed versions are Mozilla 1.7.1, Firefox 0.9.2, and Thunderbird 0.7.2. Visit find.pcworld.com/43824 for details.

D-Link Firmware Upgrade

D-LINK HAS released new firmware for its AirPlus DI-614+ wireless routers. The update, version 3.43 (find.pcworld.com/43720), fixes a hole that could allow Denial of Service attacks.

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.

ILLUSTRATION: VIKTOR KOEN

"We're a small business. We don't have IT guys!"

From just $4.95/mo.*

Web Site Solutions Made Simple

All the tools you need to build, manage and promote your company online:

- **Scalable solutions: from Do-It-Yourself template-driven Web sites to Web hosting with eCommerce**
- **Expert 24/7 customer support — let us be your IT guys**

register.com®

Join over a million happy customers. Visit us online today — and you'll be up and running on the Web in no time!

Web Sites • Hosting • Email • Domain Registration

*Price does not include domain name registration and is subject to change. All Register.com services are subject to the terms and conditions of our Services Agreement which can be found at http://www.register.com/service-agreement.cgi and certain web hosting services are also subject to the terms and conditions of our Website Hosting Services Addendum located at http://www.register.com/hosting/service-agreement.cgi ©2004 Register.com, Inc. All rights reserved.

Go to www.register.com or call 1-888-REGISTER.

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

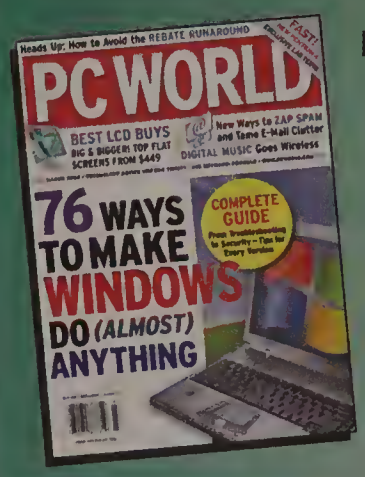
POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 37787
BOONE IA 50037-4787

GIVE A GIFT OF PC WORLD

Enjoy our special holiday gift rate: Just $19.97 for 12 issues.



PC WORLD is the perfect gift that lasts all year. Each month, your gift recipient will receive an issue of **PC WORLD** — packed with savvy computing tips, how-to's, news and reviews, Top 100 PC rankings and much more.

Plus, when you give **PC WORLD,** you'll get our exclusive **CD-ROM Wallet FREE** as our gift to you. This sleek CD-ROM wallet holds 16 of your favorite software or music CDs.

SEND GIFT TO:

NAME (Please Print)

ADDRESS

CITY STATE ZIP CODE

BILL ME (After Jan 1, 2005):

NAME (Please Print)

ADDRESS

CITY STATE ZIP CODE

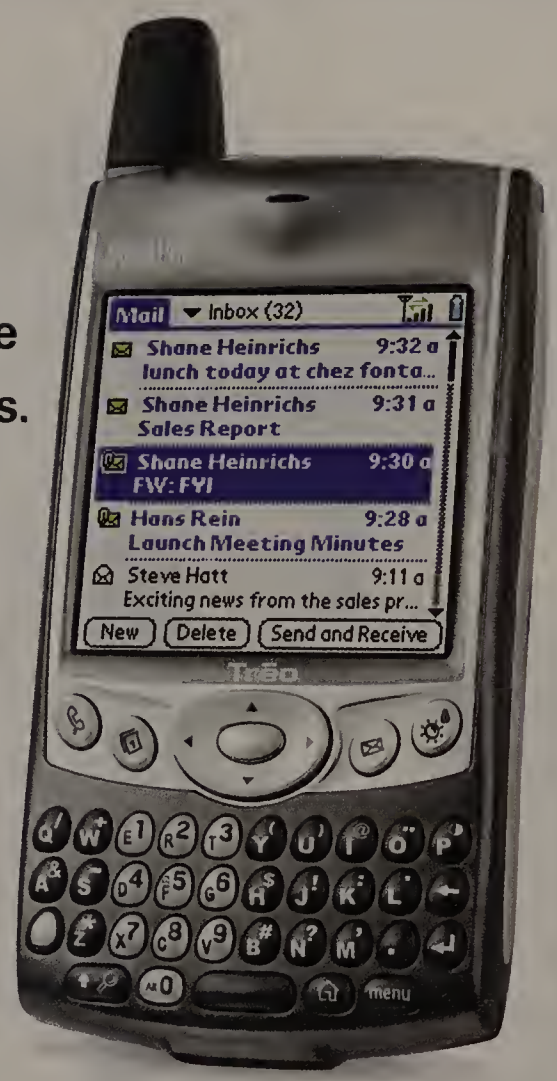
☐ I also would like to subscribe

Send no money now. We will bill you after January 1, 2005

Offer good in U.S. only.

G4ANDDL08

Suddenly the idea of email on a cell phone seems obvious.



Trēo 600

Push one button on the Treo™ 600 smartphone from palmOne and it happens. Suddenly you're on email* – sending, replying, communicating. All with an integrated, easy to use QWERTY keyboard. No complex key punching or endless text scrolling. No booting up or waiting for applications to launch. Just updated email, ready when you are, right out of the box.* The Treo 600 is also a full-featured mobile phone, a Palm Powered™ organizer and a digital camera. It lets you text message and browse the Web.* And yes, it really is small enough to slip in your pocket. Learn more at www.palmOne.com or visit your local service provider. Finally, a smartphone that really is smart.

Sprint. AT&T Wireless cingular T-Mobile palmOne

*Wireless service plan required. Email and web require data services and ISP, and additional charges may apply. Wireless coverage may not be available in all areas. Screen image simulated. ©2004 palmOne, Inc. All rights reserved. palmOne, Treo, and Palm Powered are among the trademarks or registered trademarks owned by or licensed to palmOne, Inc. All other brand and product names are or may be trademarks of, and are used to identify products or services of, their respective owners.

NEW PRODUCTS

EDITED BY TOM MAINELLI

Camera Phones Go Megapixel

New phones offer more features and higher-resolution images, but don't ditch your stand-alone camera.

THE NEW Sprint PCS Vision Picture Phone PM-8920, Kyocera Koi, and Nokia 7610.

CELL PHONES

EARLY CAMERA phones were more toy than tool, capturing low-resolution images better suited for throwaway shots than photo-album memories. Kyocera, Nokia, and Sprint PCS hope to change that with new megapixel-plus camera phones capable of taking pictures good enough for 4-by-6-inch prints. However, my tests show that while their photos are larger, they still lack the sharpness, detail, and color accuracy stand-alone digital camera users demand.

I tested preproduction versions of the Kyocera **Koi** ($199 to $299) and the $450 Nokia **7610**, plus a shipping version of the $300 Sprint PCS **Vision Picture Phone PM-8920**. I photographed our test mannequin, Gloria, indoors using each camera's highest resolution setting. Afterward I moved images off the Kyocera and Nokia to a PC using a USB cable; Sprint PCS does not offer a cable, so I transferred the photos by e-mailing them as file attachments.

I viewed the resulting test images on my PC screen and as 4-by-6 prints. Though all were satisfactory, none were exceptional. For example, the 1280-by-960-resolution snapshots from the Kyocera Koi appeared a little washed out, and the flesh tones looked a bit too gray. The Nokia 7610's 1152-by-864-resolution pictures offered slightly better skin tones, but overall they were too dark—in part due to the device's lack of a built-in flash. The Sprint PCS PM-8920's 1280-by-960-resolution images looked brighter, but they were grainy, with very noticeable color speckling.

Overall, I consider the photo and video quality of these phones comparable to that of low-end Webcams—and far below that of digital cameras selling for as little as $200.

KYOCERA KOI

KYOCERA'S new phone has the most original design of the bunch: Its handset features a 2-inch LCD screen that doubles as the phone's cover. To open the Koi, you swivel the screen 180 degrees to reveal the dial pad. Open or closed, the screen is always in view.

If you hold the phone in your right palm, your index finger conveniently touches the scroll button on the side. With it you can easily adjust the volume as you talk, or you can navigate the on-screen, pinwheel-style user interface.

PHOTOGRAPH: MARC SIMON

60 1-MEGAPIXEL CAMERA PHONES
Kyocera Koi, Nokia 7610, Sprint PCS Vision Picture Phone PM-8920

62 PERSONAL FINANCE
Microsoft Money 2005 Premium, Intuit Quicken Premier 2005
DIGITAL CAMERA
Sony Cyber-shot DSC-F88

64 LCD MONITOR
BenQ FP231W
DESKTOP
Hewlett-Packard Media Center M1050y

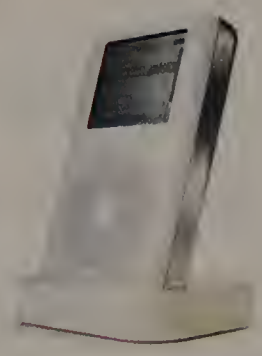
64 NETWORKING
Netgear WGR101 Wireless Travel Router

66 PDA
Hewlett-Packard IPaq Pocket PC H6315
IMAGE EDITING
Microsoft Digital Image Suite 10
INPUT DEVICE
Microsoft Optical Mouse

68 BUSINESS CARD SCANNER
Corex Cardscan Executive
NETWORKING
D-Link DGS-1008D, EGig EG8G-Z

68 FITNESS COMPUTER
Polar S625X

70 MP3 PLAYER
Apple IPod
SOFTWARE UTILITY
Symantec Norton Ghost 9



70

Open, the phone measures an above-average length of 7 inches, yet it's comfortable to use and to hold against your ear.

The phone's camera is hidden behind a lens cover. Sliding it up automatically activates the 1.2-megapixel camera, which includes a flash. You can take photos with the phone open (vertically) or closed (horizontally).

The phone's biggest drawback: In my informal battery tests, the Koi conked out sooner than the other two phones.

As we went to press, Kyocera still hadn't announced which carrier would offer the Koi, but the unit should be available from a major provider by the time you read this.

PHOTO RESULTS: All three units produced imperfect images of our test mannequin. The Kyocera Koi's were drab (left), the Nokia 7610's looked dark (center), and the Sprint PCS PM-8920's had color artifacts.

NOKIA 7610

MANY OF Nokia's phones have a distinctive appearance, but they often include ambiguous icons on the buttons, and the 7610 is no exception. While it looks stylish—complete with black, shiny buttons that curve slightly to the left like the letter J—the phone was a bit hard to use. Numbers on the dial pad are too close together, making you liable to inadvertently press the wrong one, and some button icons are indecipherable.

Once you do get to the menu, navigating between entries such as Movie, Web, and instant messaging is simple. Back on the home screen, activating the 1-megapixel camera is easy, so you're always ready to start shooting.

The 7610 omits a flash, but its 2.25-inch screen—the largest and brightest in this group—is a pleasure to use when shooting photos and short video clips.

Unfortunately, the 7610's flat design made it uncomfortable for phone calls. It also lacks a standard volume-control button; to adjust the volume during a call, you must use the scroll button on the dial pad, which means holding the phone away from your ear. The 7610 is available now through Cingular.

SPRINT PCS PM-8920

THE SPRINT PCS PM-8920 is the smallest phone here, but it's also the plainest. It comes with a built-in flash and a few extra camera tools, including Color Tone effects such as Sepia, Negative, and Sketch. Another nice touch: The 1.3-megapixel camera has a switch that toggles between portrait and close-up modes.

It sports a clamshell design and a silver body; a camera button is on the side below the volume controls. However, after you press the button, the camera takes about 4 seconds to activate. (The Kyocera and Nokia cameras each take less than 2 seconds to start up.)

The phone includes a small screen on the outside, which can display caller ID during an incoming call, and a larger, 1.8-inch screen inside. Navigating the on-screen menus was manageable, thanks to an intuitive interface. Overall, the unit is comfortable to use, and it features a speakerphone.

While I would not recommend replacing your current stand-alone digital camera with any of these units, the Kyocera Koi was my favorite phone of the bunch. Despite its shorter battery life, I liked the Koi's ease of use, and it produced decent images. Add to that a reasonable price, and you have a camera phone that will please most casual users.

—Grace Aquino

Koi
Kyocera
★★★½☆
Well-designed Koi is a pleasure to use; battery life could be better.
Street: $199 to $299
find.pcworld.com/43788

7610
Nokia
★★½☆☆
Slick-looking phone has a great screen but is cumbersome.
Street: $450
find.pcworld.com/43790

Picture Phone PM-8920
Sprint PCS
★★★☆☆
Lots of features, but this plain-looking phone fails to excite.
Street: $300
find.pcworld.com/43792

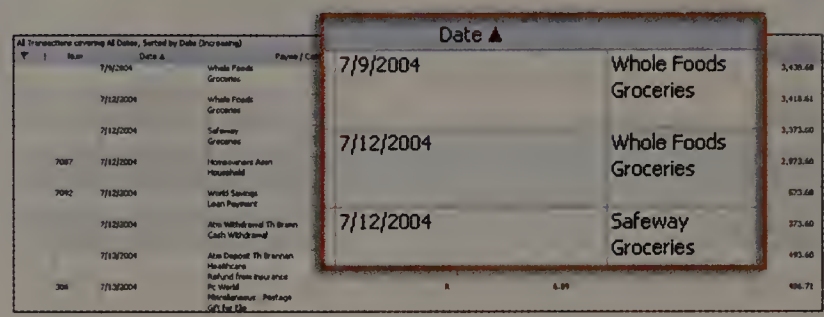
Personal Finance Goes for Convenience

FINANCES

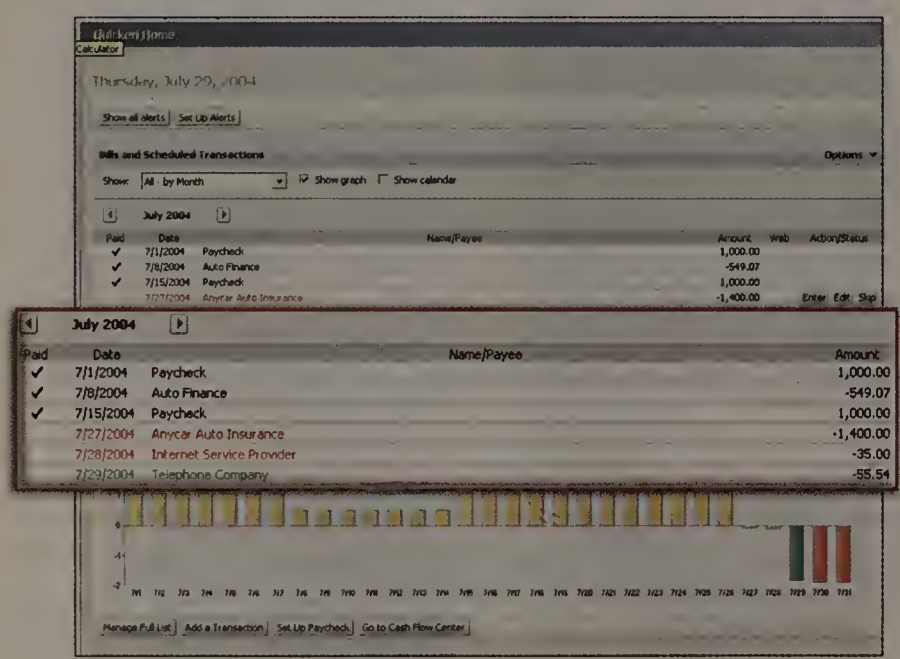
THE ANNUAL updates of Microsoft Money and Intuit's Quicken once again reach out to new users seeking help managing their finances. I tried shipping versions of **Money 2005 Premium** and **Quicken Premier 2005** (both $80). Either will please newcomers, but neither is an essential upgrade for owners of recent versions—with the possible exception of Money customers seeking super-easy access to their accounts online as well as via the desktop app.

That's because Money 2005 has automated synchronization of account data in the desktop with a Web-based MSN Money account. Entries in the desktop software appear automatically online (and vice versa), a huge convenience for people who want to manage finances from different locations via a browser—and don't mind storing their financial data on Microsoft's servers.

The Web synchronization worked fine in my tests, but note that to use it you need a .Net Passport from Microsoft. Also, Microsoft requires that you upgrade Money every two years to continue using *any* of its online services. If you don't upgrade, you won't be able to download transaction data from banks or other institutions—a big drawback.



KEEP IT SIMPLE—OR NOT: Money 2005's default view omits memos and categories, but you can see them in the traditional view shown here.



LOOK AHEAD: Quicken 2005's home screen shows upcoming bills, deposits, and a running balance to help make sure you're covered.

As usual, Money comes in four flavors: the $30 barebones Standard edition; the $60 Deluxe version with planning tools; the $80 Premium version that adds extra investment tools to Deluxe; and the $90 Small Business edition for those who mingle personal and small-business accounts.

To make the program less intimidating, Money's register now shows, by default, only check number (where applicable), payee, date, amount, account balance, and whether or not a transaction has been reconciled. For users who want it, the traditional advanced view, which shows categories and memos, is still available.

QUICKEN EVOLVES

THE CHANGES in Quicken are less dramatic. The major innovation is on the home screen's list of upcoming bills, which now includes scheduled deposits and a running balance meant to show you if you'll have enough money for all your payments. This isn't a bad idea, but since the list doesn't show nonbill expenditures such as cash withdrawals, balance estimates are only approximate at best.

Other tweaks: Quicken can now memorize rules to turn cryptic payee names in downloaded records into ordinary English (E BAUER*51590045 becomes Eddie Bauer, for example). And another step toward ease of use lets you make drop-down category lists less unwieldy by concealing categories you rarely employ. Handy new tools for filtering and finding entries include the ability to assign colored flags to your transactions.

Quicken's versions—the $30 Basic, $60 Deluxe, $80 Premier, and $90 Premier Home & Business—correspond roughly to Money's. Intuit won't say how long it will support Quicken's online services.

—*Yardena Arar*

Money 2005
Microsoft
★★★★☆
Worth the upgrade if you want automated Web synchronization.
Street: Premium $80
find.pcworld.com/43806

Quicken 2005
Intuit
★★★★☆
Welcome but hardly essential tweaks improve a solid performer.
Street: Premier $80
find.pcworld.com/43804

QUICK TAKES

Sony's Self-Portrait Cyber-shot Camera

THE ROTATING lens on Sony's $450 **Cyber-shot DSC-F88** makes self-portraits easier—but otherwise this 5.1-megapixel camera has little unique about it. Though it's larger and weighs more than Sony's similar DSC-T1, it has a much smaller LCD (1.8 inches versus 2.5 inches). The F88 costs a bit less and has some useful manual exposure controls, but you really have to like pictures of yourself to choose it over the T1. find.pcworld.com/43726 —*Alan Stafford*

PHOTOGRAPH: RICK RIZNER

EXILIM

exilim.casio.com

A New Style Of Camera.

美

A Camera With Style...EXILIM

瞬

Large 2" LCD screen
2.5 Times Super long-life battery

EX-Z40

POWERFUL SUPER LIFE BATTERY

3X OPTICAL ZOOM
4.0 MEGAPIXELS

So slim. So sleek. So stylish. So what are you waiting for? EXILIM, created by CASIO. Where innovation is the inspiration behind everything we do. CASIO was one of the first manufacturers to create a consumer digital camera with an LCD screen. We are experts in all things compact and captivating. And the result is EXILIM. A camera you can take with you anywhere. Shooting and sharing pictures has never been easier. It's the all-around coolest camera there is. It's EXILIM. It's CASIO. It's the camera for you.

EX-S3
3.2 MEGAPIXELS

EX-Z30
3.2 MEGAPIXELS

EX-P600
6.0 MEGAPIXELS

*2.5 times the battery life of current CASIO cameras (comparison between EX-Z4U and EX-Z40)
*CIPA standard for battery life indicates 360 photos on a single charge. Image on camera LCD simulated

CASIO®

Big BenQ LCD Disappoints

MONITOR

BENQ's 23-inch wide-screen LCD monitor—the new **FP231W**—makes an impressive desk trophy. I can't tell you how many coworkers stopped by to cast covetous glances at its business-class beauty. But unfortunately, its performance doesn't live up to its great first impression.

Although the monitor's sedate charcoal-and-matte-silver cabinet looks very professional, the $1999 FP231W is clearly meant for greater things than just spreadsheets. In addition to analog and digital inputs, it includes S-Video and composite inputs. The unit's vast screen, with a 1920 by 1200 native resolution, can display several applications at once—and that isn't counting the picture-in-picture window for watching TV or videos.

However, in my informal tests of a shipping model, regular video seemed to be a little grainy and ghosty. High-definition video was sharper, but still showed some ghosting. In any application, light areas appeared shimmery and washed out, causing black text on a white background to display as less than perfect.

The FP231W offers some nice features. For example, unlike most 23-inch models it can swivel from side to side as well as tilt. Even when I raised the monitor several inches on its base, it felt stable and well balanced. Sadly, such fancy features don't overcome the unit's iffy image quality.

—*Laura Blackwell*

THE 23-INCH BenQ FP231W.

FP231W
BenQ
★★½☆☆
Good looks and nice features don't compensate for giant-size LCD's less-than-stellar display.
Street: $1999
find.pcworld.com/43478

QUICK TAKES

Wireless Travel Router Rocks

HOTEL BROADBAND is great, but if you'd rather do your work outside on the balcony—instead of at the uncomfortable desk in your room—check out Netgear's **WGR101 Wireless Travel Router.** A little bigger than a deck of playing cards, this $100 device has its own firewall and connects to the hotel network, providing 802.11g wireless access for one or more notebooks (you can even securely share your connection with a colleague rooming next door).
find.pcworld.com/43746

—*Edward N. Albro*

HP's Dreamy Media Center

DESKTOP

TEST Center

TRICKED OUT with a gorgeous 23-inch high-definition LCD monitor, Hewlett-Packard's **Media Center M1050y** is a dream system. Unfortunately, the price is a bit of a nightmare: $4900.

But if you have the capital, you'll get a powerful Windows XP Media Center Edition 2004 PC that makes managing your burgeoning digital lifestyle remarkably easy and fun. The F2304 monitor's 1920 by 1200 native resolution offers beautiful video playback, and the Klipsch ProMedia Ultra THX 5.1 speakers produce wonderfully crisp, clear audio.

I also liked the unit's removable Personal Media Drive, which you can take out of the system's chassis to use with any other PC via USB 2.0. Equally convenient is the computer's built-in seven-in-one memory card reader.

The system's black-and-silver tower case looks a little too, well, PC to make a full transfer to most living rooms. But with its 3.6-GHz Pentium 4 processor, 1GB of DDR400 SDRAM memory, and 250GB hard drive, my shipping model proved plenty powerful for most any computing task, scoring 96 on WorldBench 5—on par with comparably configured desktop systems that we have previously tested.

HP has less expensive versions of the M1050y that omit goodies such as the Klipsch speakers ($250) and the LCD monitor ($2200). But if you're looking for a multimedia powerhouse, it would be hard to find one better than this drool-worthy configuration.

—*Anne B. McDonald*

Media Center M1050y
Hewlett-Packard
★★★★☆
If you're serious about a digital lifestyle and have the bucks, this PC will make you very happy.
List: $4900
find.pcworld.com/43718

HP'S MEDIA CENTER M1050y with the optional LCD and speakers.

PHOTOGRAPHS: MARC SIMON (TOP LEFT AND BOTTOM RIGHT); RICK RIZNER (TOP RIGHT)

iriver™
the future of entertainment

Introducing the iRiver H300 series. These sleek portable music players deliver features that you can't find anywhere else: play hundreds of hours of music, view color digital photos, record music from any audio source and more. For info, visit www.iRiverAmerica.com

iRiver products are available nationwide at Amazon.com, Best Buy and Circuit City

HP's Thrice-Wireless PDA

HANDHELDS

NO WIRELESS-enabled handheld can guarantee an Internet connection wherever you go, but HP's new IPaq H6300 Pocket PC series at least gives you several chances by integrating GSM/GPRS cellular, 802.11b Wi-Fi, and Bluetooth capabilities. Though pricey, these handhelds should appeal to business travelers.

IPaq Pocket PC H6315
Hewlett-Packard
Preproduction unit, not rated
Well-designed Pocket PC offers three flavors of wireless and a good low-resolution camera.
List: $600 ($500 after rebate from T-Mobile with activation of a new account)
find.pcworld.com/43702

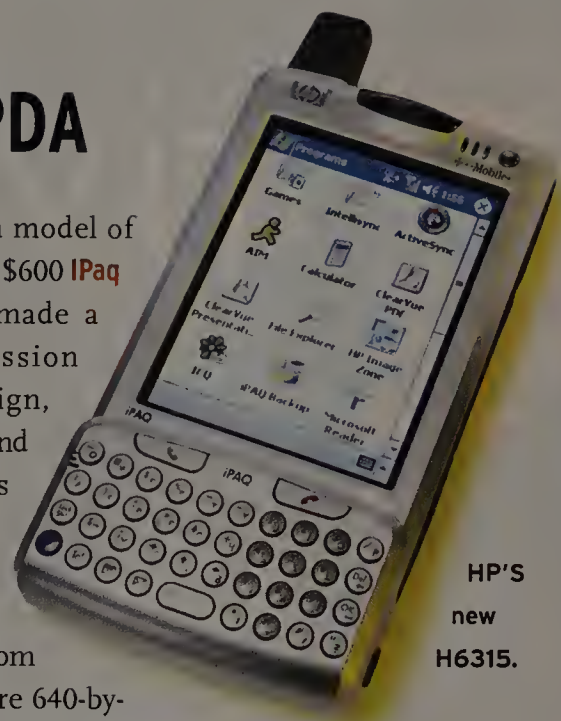
A preproduction model of HP and T-Mobile's $600 **IPaq Pocket PC H6315** made a great first impression with its clean design, snap-on keyboard, and excellent wireless setup utility.

The H6315 also has a built-in camera with a digital zoom lens that can capture 640-by-480 images that looked surprisingly crisp and well lit.

The business-oriented My E-Mail service from T-Mobile can channel messages from several existing accounts—including POP3, Exchange, and Web-enabled Lotus Notes—into the H6315's inbox. However, I was unable to set the device to retrieve only new mail as it arrived, and my overloaded Notes mailbox crashed the device's inbox—a problem that could limit the H6315's usefulness.

Still, the H6315's triple-threat wireless capabilities make it worth a look if staying connected is a high priority.

—*Yardena Arar*



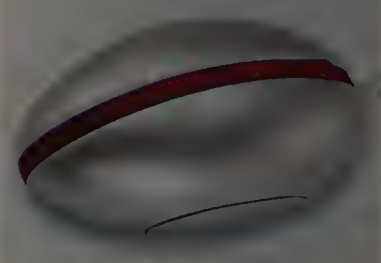
HP'S new H6315.

QUICK TAKES

A Case of Style Over Substance

THE NEW **Microsoft Optical Mouse** by designer Philippe Starck belongs in a modern art museum—but not on your desk. While the $35 mouse is one of most elegant and attractive pointing devices I've used, it's also one of the worst because its egg-shaped design makes manipulating the scroll wheel and assorted buttons far too difficult and uncomfortable.
find.pcworld.com/43688

—*Michael S. Lasky*



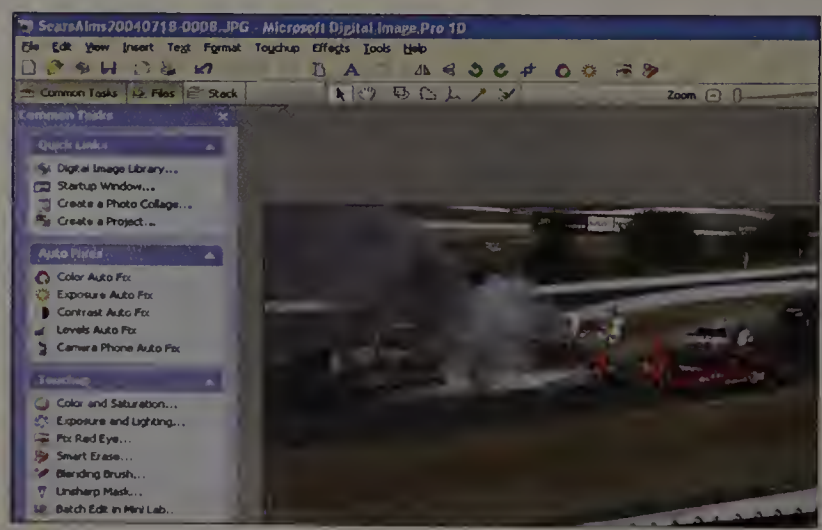
Microsoft Offers Easy Image Editing

DIGITAL PHOTOS

IF YOU'RE READY to upgrade from the basic image editing software that shipped with your digital camera, take a look at Microsoft's **Digital Image Suite 10**. The $129 package includes all the software tools you need for organizing and editing your growing digital photo collection.

At the heart of the shipping product I tested is Digital Image Library 10, a photo organizer that looks a lot like Windows XP Explorer. Library lets you easily upload your shots, rate them with up to five stars, flag them for future attention, label them with captions, and assign them keywords for easy categorization.

When you're ready to begin editing your photos, you launch Digital Image Pro 10. Microsoft arranges the tools logically, and a set of Auto Fix commands makes completing basic changes easy. Tasks such as red-eye removal and panoramic stitching require little user intervention. Digital Image Pro provides fewer options and complex commands than competitors such as Adobe's Photoshop Elements and Jasc's Paint Shop Pro, but what you do get generally works very well.



TO EDIT YOUR PHOTOS within Microsoft's Digital Image Suite 10 package, you launch the easy-to-use Digital Image Pro 10 application.

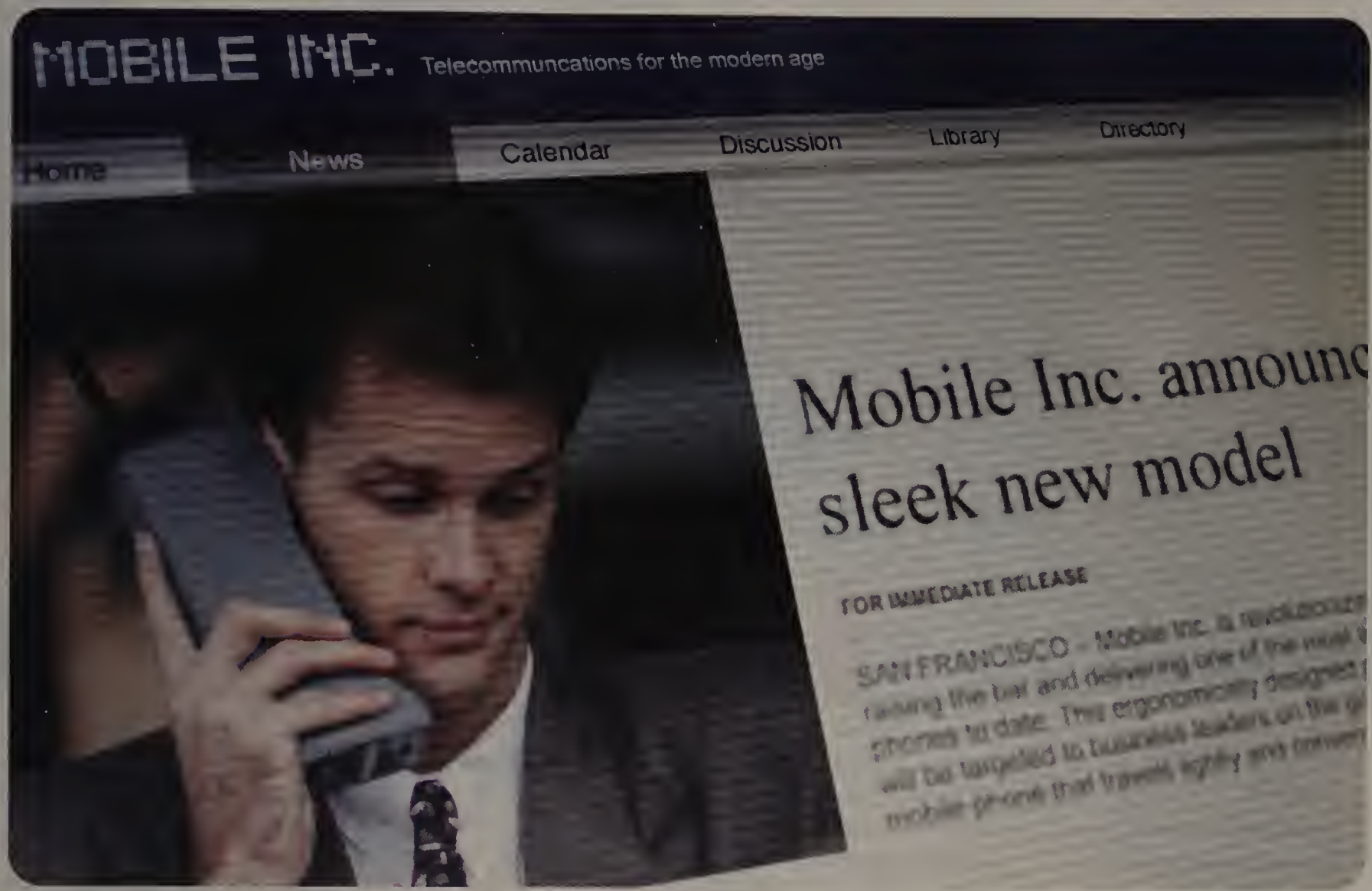
The app's simplicity can be a bit limiting, however. For example, unlike most editors Digital Image Pro 10 will let you work only on one image at a time, so you can't try out different edits on side-by-side copies of the same photo.

Digital Image Suite 10 is a solid package, particularly for photographers ready to step up from basic image editing apps. Advanced users, however, may not appreciate the way the suite's ease of use masks some control limitations.

—*Paul Jasper*

Digital Image Suite 10
Microsoft
★★★½☆
A solid image editing suite for evolving photogs, but its simplicity may annoy advanced users.
Street: $129
find.pcworld.com/43600

PHOTOGRAPHS: MARC SIMON (LEFT); RICK RIZNER (RIGHT)



When was the last time your Intranet was updated?

Announcing the Macromedia® Web Publishing System. You build and manage the site. Users keep content fresh.

With Macromedia® Studio MX 2004, Contribute™ 3 and Contribute Publishing Services, you can affordably build, manage, and publish enterprise sites. And unlike the average content management system, this works. You determine who can edit and who can publish. Then users simply point and click to update any page. In no time, dated content will be a thing of the past. Learn more at **www.webpublishingsystem.com**

macromedia®
WEB PUBLISHING
SYSTEM

Copyright © 2004 Macromedia, Inc. and its licensors. All rights reserved. Macromedia, the Macromedia logo, and Contribute are trademarks or registered trademarks of Macromedia, Inc. in the United States and/or other countries. Other marks are the property of their respective owners.

CardScan Updated

SCANNER

COREX'S NEW $250 **CardScan Executive**, a revision of the indispensable business card scanner and contact management bundle, presents a fresh look, some additional tools, and notably faster performance than its predecessor.

Version 7 of the CardScan software dispenses with the old virtual-Rolodex-on-your-screen look, replacing it with a more functional interface that includes a basic list of names plus alphabetical tabs for lightning-fast access to all of your contacts.

Among a handful of new features is the duplicates wizard, which displays two or more similar cards side by side so you can cherry-pick the data you want to keep.

In addition, the package's new color card scanner is noticeably speedier than the previous-generation 600c. The scanner processed five cards in monochrome in about 21 seconds (versus 33 seconds for the 600c), and five cards in color in about 26 seconds (versus 46 for the 600c).

Unfortunately, Corex has yet to add batch-feed capabilities to its device, so you still must insert each card by hand.

CardScan's bundle has long been a reliable staple for business card scanning and management, and while this update breaks little new ground, it is a solid improvement over previous editions. If your current card scanner is fast enough, consider buying the $79 software upgrade alone.

—*Tracey Capen*

THE NEW CardScan Executive scanner.

CardScan Executive
Corex
★★★★☆
Minor improvements and faster speed make for a solid update.
Street: $250
find.pcworld.com/43596

QUICK TAKES

Polar's New Running Computer

FITNESS GEEKS, rejoice: Polar's $350 S625X package uses a wristwatch heart-rate monitor and a distance-measuring foot pod to serve up a smorgasbord of workout details, including advanced measurements such as maximal oxygen uptake (VO_2 max). After measuring my morning run with the hardware—everything from average running speed to altitude gained to maximum heart rate—I transferred the data from the watch to my infrared-equipped notebook and then used the included Polar Precision Software to pore over the particulars. Learning to operate the five-button watch and to navigate the PC software takes some time, but as a reward you get performance details usually reserved only for the pros.

find.pcworld.com/43686

–*Tom Mainelli*

Gigabit Switches Supercharge Networks

NETWORKING

A NETWORK is only as fast as the sum of its parts. If you've recently updated your PCs' network adapters from standard 10/100 ethernet to gigabit, you'll need to upgrade your network switches to take advantage of the faster technology. I tested two new eight-port gigabit switches, and both performed well—though one seems a tad overpriced.

I tried out D-Link's **DGS-1008D** ($100) switch and EGig's **EG8G-Z** ($199) switch—both with eight ports—on my small home network consisting of PCs using integrated and PCI-based gigabit adapters and Cat 5e cable, which supports transfers of up to 350 megabits per second. I used Ixia's Qcheck network troubleshooting utility to test performance and found that each switch supported average upload speeds of about 250 mbps—more than three times faster than the same network using my old 10/100 switch. Downloads were equally impressive, with both gigabit switches supporting average download speeds of 275 mbps versus about 86 mbps with the previous 10/100 switch.

When I retested the switches using the more common, less-expensive Cat 5 cable (which is rated to 100 mbps), I saw about a 15 percent improvement over the speeds realized using the 10/100 switch and the same cable.

Though the EGig targets business users who want a no-nonsense box, I'm not sure the package warrants the $99 premium it commands over D-Link's more stylish device.

—*Ramon G. McLeod*

DGS-1008D
D-Link
★★★★☆
Well-designed, simple-to-use gigabit switch peps up a network.
Street: $100
find.pcworld.com/43680

EG8G-Z
EGig
★★★½☆
No-nonsense, hardworking switch is a bit on the pricey side.
Street: $199
find.pcworld.com/43682

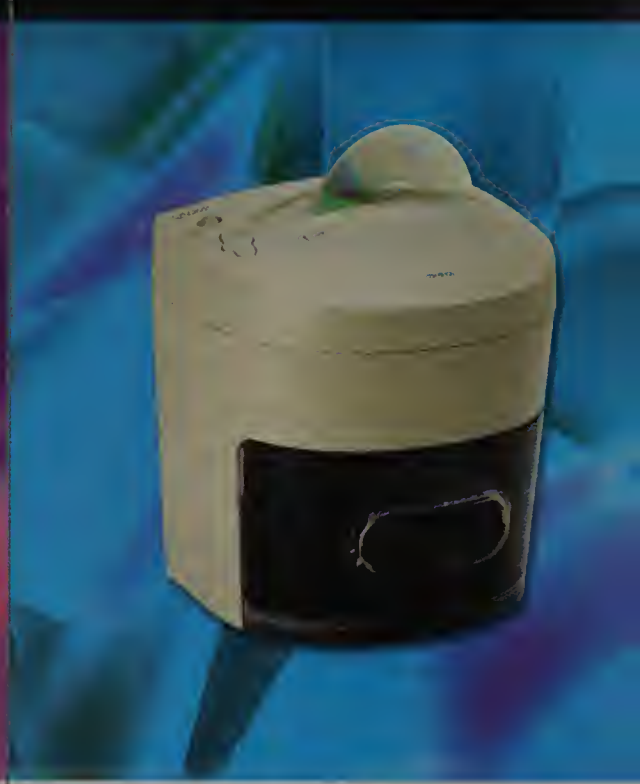
EGIG'S EG8G-Z and D-Link's DGS-1008D.

PHOTOGRAPHS: MARC SIMON (LEFT); RICK RIZNER (RIGHT)

Print
CDs & DVDs

Print & Burn
CDs & DVDs

Shred
CDs & DVDs



Signature Z1® CD/DVD PRINTER

Bravo II™ DISC PUBLISHER

DS360 DISC SHREDDER

We've got everything you need for fast and affordable CD/DVD printing, duplication and even disc destruction.

The **Signature Z1 CD/DVD Printer** prints directly onto the surface of your discs with sharp, waterproof thermal transfer ink. It's great for labeling your music, video, data and photo CDs and DVDs, whether at home or the office. **Just $139.00.***

Need to make lots of discs? Primera's award-winning **Bravo II Disc Publisher** burns and prints up to 50 discs at a time. It combines fast, automatic CD/DVD duplication with built-in 4800 dpi color printing. It's an incredible "all-in-one" disc factory that sits right on your desktop! **Just $2195.00.****

The **DS360 Disc Shredder** keeps your confidential information from falling into the wrong hands. It effortlessly grinds discs into small, unrecoverable pieces. Credit cards and folded paper can also be destroyed. **Just $129.00.***

PRIMERA TECHNOLOGY, INC.

Call Primera at **1-800-797-2772** for more information and a **FREE** sample disc (not a shredded one, of course!).
Visit us at **www.primera5.com** or e-mail to sales@primera.com.

*Manufacturer's Suggested Retail Price in the U.S.A.; reseller prices may vary. **Manufacturer's Suggested Retail Price for the CD model, DVD/CD model $2695.00.

©2004, Primera Technology, Inc. All rights reserved. Bravo is a trademark and Primera and Signature are registered trademarks of Primera Technology, Inc.
All other trademarks are the property of their respective companies.

Apple's Evolutionary IPod

MP3 PLAYER

APPLE RECENTLY launched its fourth-generation **IPod**—and by now you either love the slick-looking player, or its features and price have left you unimpressed. Here's a simple take on the new version from somebody residing in the second camp: This one's much better, but it's still not perfect.

IPod 40GB
Apple
★★★★½
Apple's portable player has most of what you need, but power users may want more flexibility.
List: $399
find.pcworld.com/43744

Apple now offers 20GB and 40GB IPods for $299 and $399, respectively. That's $100 less for the same capacities as the previous generation, although accessories such as cases are no longer standard.

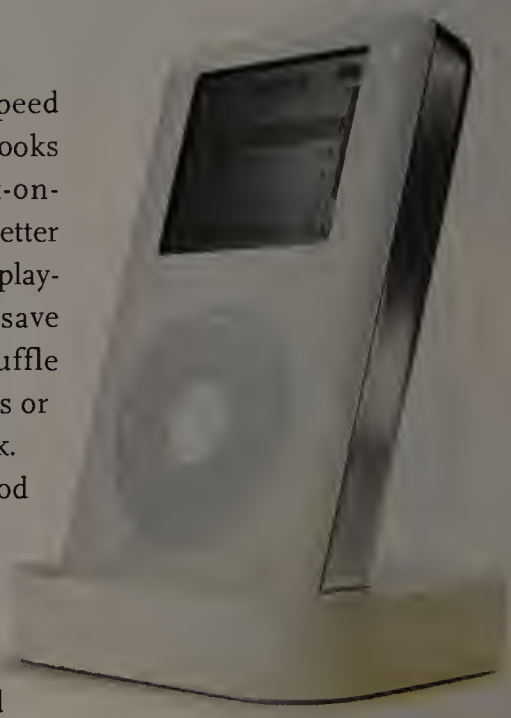
The major improvements: Apple rates the new IPod's battery life at 12 hours of continuous play (up from 8 hours), and I netted exactly that in tests of a shipping 40GB unit. To improve usability Apple added the IPod Mini's click-wheel control, which elegantly combines touch-sensitive scrolling with easier-to-use click buttons.

Other improvements are minor: You can now speed up Audible.com audiobooks without the chipmunk-on-helium effect, you can better manipulate On-The-Go playlists (and more easily save them), and you can shuffle through all of your songs or albums with a single click.

Frustratingly, the IPod retains several feature omissions. Apple still limits codec support to AAC, MP3, and Apple Lossless (plus .wav and AIFF), so fans of WMA, Ogg Vorbis, and FLAC are out of luck. You still can't change the order of songs on a playlist, and you can purchase music online only through Apple.

The IPod's thoughtful design and features make it an excellent MP3 player. But for picky buyers who are holding out for the ideal portable music device, the wait continues.

—*Eric Dahl*



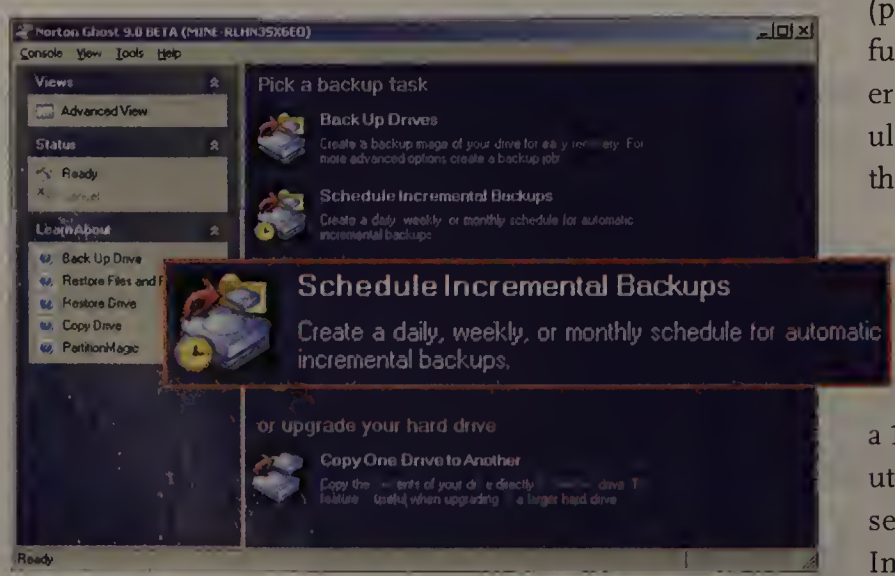
THE FOURTH-generation IPod incorporates a new click wheel.

The Ghost With the Most

UTILITIES

SYMANTEC'S NEW **Norton Ghost 9** drive-imaging software makes it easier than ever to take a snapshot of your hard drive to prepare for those times when computing disaster strikes. I tested a beta version of the $70 Windows XP/2000–only application, based largely on Drive Image 7 from PowerQuest—a recent Symantec acquisition—and found that it has closed the feature gap with Acronis's competing True Image 7.0.

The most dramatic new feature in Ghost 9 is the recovery environment that appears when you boot from a CD.



SYMANTEC'S NEW Norton Ghost 9 drive-imaging application lets you schedule incremental backups of your important PC data.

Gone is the confusing Ghost 2003 interface; its replacement mimics Windows exactly, right down to the Open and Save dialog boxes.

Ghost 9 can now even back up your operating system partition from within Windows (à la True Image)—no reboot required. Plus, Ghost can now create incremental images of your hard drive—a time-saver that backs up only changes (previous versions created a full image every time). Another new feature lets you schedule image backups to run in the background, as you work.

In my tests Ghost 9 proved amazingly fast at creating images, compressing and writing a 3.12GB OS partition to a 1.43GB image in only 1 minute, 21 seconds—3 minutes, 4 seconds quicker than True Image. Ghost 9 restored the same image in 1 minute, 18 seconds—about 4 minutes faster than True Image. However, booting into Ghost 9's recovery environment itself can take up to 3 minutes; the same task took about 13 seconds for True Image. My Ghost 9 beta also lacked integrated support for my Serial ATA hard drive, but Symantec says the final version will support most drives.

My only other complaints with Ghost 9: Installation requires Microsoft's .Net framework, and the package costs about $20 more than the competition. But its usability and speed improvements make it worth spending the extra cash.

—*Jon L. Jacobi*

Norton Ghost 9
Symantec
★★★★☆
Speedy drive imaging app performs well but costs slightly more than the competition.
List: $70
find.pcworld.com/43690

PHOTOGRAPH: MARC SIMON

SONY

Small and Medium Business

Introducing Sony VAIO® Professional PCs and DirectPoint℠ sales support.

Sony recommends Microsoft® Windows® XP Professional for Business.

Professional-grade computers designed for your business.

You wanted a versatile computer. You wanted a computer to handle your demanding, ever-changing business. And we delivered by creating the new Sony® VAIO® Professional PCs with Intel® Centrino™ Mobile Technology. Sony VAIO® Professional PCs are streamlined with optimum performance to tackle anything that comes your way. And with a 17" widescreen and a full-size keyboard, the A170B notebook PC can also serve as a sleek and mobile desktop replacement. Plus, with Sony DirectPoint℠ sales support, you're just one call away from a helpful, personal sales team that will make sure you have the tools essential for your business, from warranty coverage and product configurations to leasing options and more. Business is moving more quickly than ever. Sony lets you set the pace.

intel inside centrino™ MOBILE TECHNOLOGY

CALL 877-614-SONY (7669)

CLICK www.sony.com/smb7

SONY

Small and Medium Business

Let the power of Sony® VAIO® Professional Notebook PCs with Intel® Processors take you to the next level. Sleek and compact for businesses on the go, advanced functions include wireless capability and integration with other high-quality Sony products. Now your office goes wherever you and your business take you.

Mobile Desktop Replacement

A Series

Build-to-Order VGN-A130B

- Intel® Pentium® M Processor 715 (1.50AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Professional
- 40GB[2] Hard Drive
- 15" XGA TFT Display
- 256MB DDR SDRAM
- CD-RW/DVD-ROM Combo Drive[4]
- 1-Year Limited Warranty[3]

$1,519.99 Lease for only **$43** per month.[6]

UPGRADES

- Add an Additional Rechargeable Battery Pack for $199.99
- Add a Port Replicator for $199.99
- Add an Additional Power Adapter for $99.99

Desktop Replacement

A Series

Build-to-Order VGN-A170B

- Intel® Pentium® M Processor 715 (1.50AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Professional
- 60GB[2] Hard Drive
- NEW! 17" Widescreen WUXGA (1920x1200) with XBRITE™ LCD Technology
- NEW! ErgoBright™ Technology with Smart Display Sensor
- 512MB (256MBx2) RAM
- CD-RW/DVD-ROM Combo Drive[4]
- Integrated Wireless LAN 802.11b/g with Bluetooth® Wireless Technology[5]
- 1-Year Limited Warranty[3]

$2,099.99 Lease for only **$60** per month.[6]

UPGRADES

- Add an Additional Rechargeable Battery Pack for $199.99
- Add a Port Replicator for $199.99
- Add an Additional Power Adapter for $99.99

Power, Mobility and Performance

S Series

Build-to-Order S170B

- Intel® Pentium® M Processor 715 (1.50AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Professional
- 40GB[2] Hard Drive
- 13.3" WXGA Display
- 256MB RAM
- Integrated DVD-RW Drive[4]
- Only 4.2 lbs. with Supplied Battery
- 1-Year Limited Warranty[3]

$1,969.99 Lease for only **$56** per month.[6]

UPGRADES

- Upgrade to a 60GB[2] Hard Drive for $50
- Add a Large-Capacity Battery for $299.99
- Add a Port Replicator for $199.99
- Add an Additional Power Adapter for $99.99

Business Professional

S Series

Build-to-Order S170B

- Intel® Pentium® M Processor 735 (1.70AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Professional
- 60GB[2] Hard Drive
- 13.3" WXGA Display with XBRITE™ LCD Technology
- 512MB RAM (256MBx2)
- Integrated DVD-RW Drive[4]
- Integrated Wireless LAN 802.11b/g[5]
- Only 4.2 lbs. with Supplied Battery
- 1-Year Limited Warranty[3]

$2,419.99 Lease for only **$69** per month.[6]

UPGRADES

- Add a Large-Capacity Battery for $299.99
- Add an Additional Power Adapter for $99.99
- Add a Port Replicator for $199.99

Sony VAIO® Desktop PCs equipped with Intel® Processors offer many customized options to meet the demands of business, all while remaining true to the Sony tradition of renowned quality, reliability and style.

Sony VAIO® RS Series Desktop PC

Build-to-Order PCV-RS600CB

- Intel® Pentium® 4 Processor with HT Technology at 2.80CGHz[1]
- Microsoft® Windows® XP Professional
- 120GB[2] (7200 rpm) Hard Drive
- 256MB DDR at 400MHz
- DVD-ROM and CD-RW Drives[4]
- 128MB ATI® RADEON™ 9200 Graphics Card
- 1-Year Limited Warranty[3]

$922.99 Lease for only **$27** per month.[6]

UPGRADES

- Upgrade to an Intel® Pentium® 4 3GHz[1] CPU for $30
- Upgrade to a 160GB[2] (7200 rpm) Hard Drive for $21
- 3-Year Limited Warranty[3] for $199

StylePro™ Series 17" Flat Panel LCD

SDM-S74/B

- 17" TFT Active Matrix (Flicker-Free) 1280x1024 Native Resolution
- **ErgoBright™ Technology.** Saves Energy and Adjusts Brightness and Contrast to Your Preferred Viewing Level with the Touch of a Button
- **Premium Image Quality.** Auto ImageSet™ Technology Optimizes Picture for Consistent Performance
- Digital and Analog Inputs

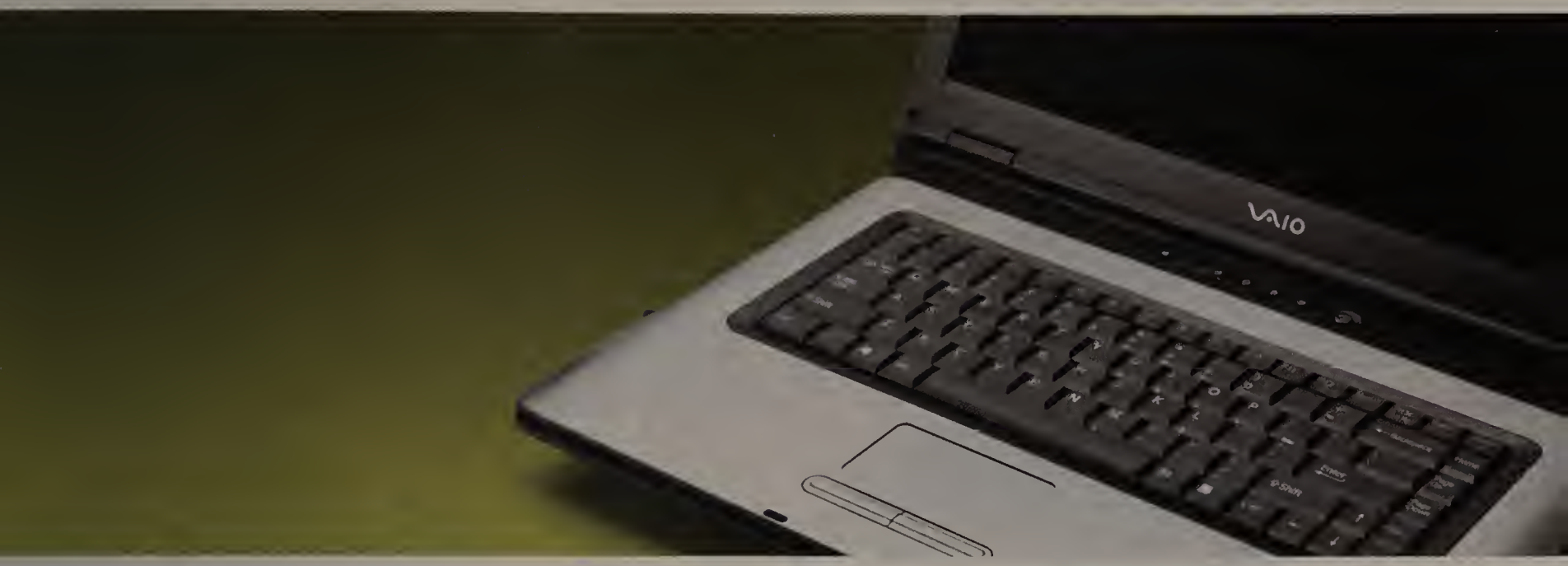
$519.99 Add to lease for only **$15** per month.[6]

CALL **877-614-SONY** (7669)

CLICK **www.sony.com/smb7**

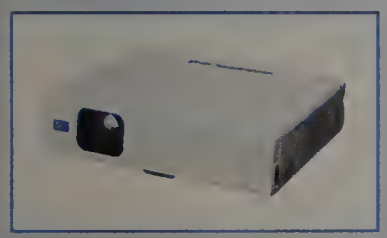
Sony recommends Microsoft® Windows® XP Professional for Business.

VAIO® PROFESSIONAL



Business Solutions

Get the edge in interactivity. From portable LCD projectors that take your show on the road to plasma displays that brighten your conference room, Sony® gives you the breadth of products your business needs. And since many Sony products are designed to work with your Sony VAIO® PC, your return on investment is that much greater. Sony lets you set the pace so you can stay ahead of the competition.



VPL-CX70 LCD Projector

A portable, stylish design with high-brightness picture and easy-to-use auto-setup features. Designed to help the mobile professional deliver brilliant presentations at sales meetings, training seminars—even executive boardrooms.

- Up to 2000 ANSI Lumens Brightness[7]
- Automatic Setup (Focus, Lens, Input, Tilt, Pixel and Keystone)
- Accepts up to XGA Native Resolution (1024x768)
- Accepts Composite, Component and PC Inputs

$2,599.99 Lease for only **$74** per month.[6]

DRX-700UL DVD+R Double Layer/DVD+RW Drive

Record up to 8.5GB[2] on one disc with Sony's new DVD+R Double Layer/DVD+RW Drive!

- Burn up to 4 Hours MPEG-2 or up to 8 Hours MPEG-1 Video on a Double-Layer Disc
- Record on Both 4.7GB DVD Media or 8.5GB Double-Layer DVD Media
- Backwards-Compatible with Many Existing DVD Players/DVD-ROM Drives[4]

$259.99 DRX700UL (External) Add to lease for only **$8** per month.[6]

$159.99 DRU700A (Internal) Add to lease for only **$5** per month.[6]

MVC-CD350 CD Mavica® Digital Camera

Unbeatable performance and value for any office needing the convenience of digital photography on a budget. Store photos directly onto inexpensive CD-R/RW media.

- 3.2 Megapixel Resolution
- Records to CD Media
- Rechargeable Infolithium® Battery Included

$399.95 Add to lease for only **$12** per month.[6]

UPGRADES

- Upgrade to 5.0 Megapixel MVC-CD500 with Carl Zeiss® Lens and Much More MVC-CD500 Just $599.95
  Add to lease for only **$17** per month.[6]

PFM-42X1 Plasma Display

The Sony PFM-42X1 high-definition display delivers high-contrast video images and sharp text for maximum impact. Progressive scan images with 1 billion colors, flexible inputs and optional network solutions make this display ideal for conference rooms and digital signage applications.

- 42" High-Definition (XGA) Plasma Monitor (Viewable Area, Measured Diagonally)
- 1024x768 (XGA) Progressive Scan
- Up to 60,000 Hours Panel Life
- Digital (DVI-HDCP) and Analog Inputs
- Stereo Speaker Capability

$4,549.99 Lease for only **$129** per month.[6]

UPGRADES

- Sony Wall-Mount Bracket for $245

Leasing and Service Information Getting the Sony business advantage is now easier than ever. Choose from a variety of competitive leasing and extended service plan options for affordability and assurance. Call a DirectPoint℠ sales support specialist for details.

"Cash in" with Low Lease Payments.[6]
48-month payment terms with $1 buyout. Ask us about other financing options.

FREE SHIPPING
ON SELECT MODELS[9]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

Sony recommends Microsoft® Windows® XP Professional for Business.

SONY

Small and Medium Business

Sony® VAIO® S Series PCs with Intel® Centrino™ Mobile Technology are packed with unique and powerful features to enhance your productivity, including integrated multimedia features, a generous keyboard, widescreen LCD, and a plug-and-display feature which automatically detects projector settings and adjusts accordingly. Power and performance for pure mobility in a light and durable magnesium case design.

LIKE NO OTHER™

DirectPoint℠ Sales Support

- You're just one call away from a dedicated sales support team that will make sure you have the tools essential for your business—including product configurations, extended service plans and leasing options.
- Our dedicated sales support teams include technical sales advisors, customer service representatives and support engineers—each focused on finding the right technology solutions for your specific business needs so you can focus on staying competitive and profitable.

Unsurpassed Selection of Business Products

- Search our extensive line of professional-grade VAIO® PCs for the one best suited to your business needs.
- Find ideal business solutions in our wide range of innovative digital accessories—from digital cameras to projectors. Each designed to integrate with Sony VAIO® PCs for optimal performance.

Customized PC Systems

- Any Sony VAIO® Professional PC configuration can be built to meet your specific business requirements.
- Flexible and scalable, Sony VAIO® Professional PCs have the ability to grow with your business, while providing you with a smart, long-term investment.

Easy Leasing and Financing

- Whatever your financial needs, Sony can help with low monthly lease payments and options for purchase that give you the flexibility to keep pace with changing business demands.

Business Class Service

- Our professional-grade service plan options provide peace of mind with up to 4 years of extended coverage as well as expert on-site support.
- Plan for the unexpected. Ask about our accidental damage protection.[8]

FREE SHIPPING
ON SELECT MODELS[9]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

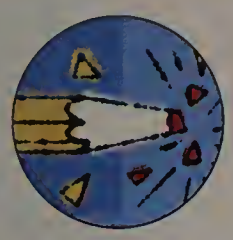
intel inside centrino™ MOBILE TECHNOLOGY

CALL 877-614-SONY (7669)

CLICK www.sony.com/smb7

The Annoyances Issue

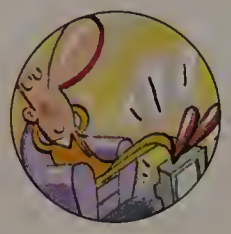
TODAY'S PCs, PRINTERS, cameras, and other gadgets are so powerful and versatile that there's only one thing they can't seem to do—stop bugging us! Whether it's a notebook that refuses to connect to your company's Wi-Fi network, software that pesters you to upgrade, or spam from African millionaires in a bind, there's always something that gets in the way of what you really want to do. That's why we've devoted this issue to the tips and tools you need to eliminate these and many other hassles. Read on, and bid annoyances adieu. ▶


76 How to Fix the Worst Irritations

90 Simplify Your System

123 Frustration-Busting Utilities

88 Hall of Shame & Fame


103 PC Tasks Made Easy

130 Could You Be Annoying?

SECTION EDITOR: EDWARD N. ALBRO ILLUSTRATION BY EDWIN FOTHERINGHAM

Enough Already!

Had it with Windows glitches, hardware headaches, and Internet irritations? Here's how to get rid of them for good.

DUCK—THERE'S ANOTHER PC annoyance coming your way. And right behind it, an endless barrage of technology-induced irritations, aggravations, and stress-causing hassles. Stay calm—and prepare yourself to be a little less annoyed. The King of Kvetches (that's me) has plenty of remedies, 26 in fact, for dead external hard drives, missing desktop icons, unpleasant printer paper jams, and good e-mail that gets the spam treatment. I've also got cures for those times when your PDA, cell phone, digital camera, monitor, and network become royal pains. And just to show that we play fair, *PC World* editors gave two vendors a chance to respond to your gripes about their products, and one of the two actually took us up on our offer. ▶

78 Inharmonious Hardware

80 Woeful Windows

81 Tangled Web

82 Application Aggravation

86 PDA Problems

86 Media Player Madness

BY STEVE BASS

ILLUSTRATIONS BY EDWIN FOTHERINGHAM

Inharmonious **Hardware**

Keep the Paper Flowing

THE ANNOYANCE: My year-old inkjet was driving me nuts with paper jams. No matter which kind of paper I used—plain or photographic—my output was kaput.

THE FIX: To avoid printer paper jams, make sure that all the paper in the tray is the same type and weight. (The most common paper weight is 20 pounds; it's usually listed on the package.) Don't mix photo paper, heavy card stock, and plain paper, for example. Always store your paper flat. If your printer comes with a vertical feed tray and you don't print often, flip the paper around to prevent it from curling in the tray. Use a can of compressed air (it costs about $6 at your local electronics store) to keep the insides of the printer free of dust and dirt. Gently remove bits of paper or labels that may be stuck on the feed rollers. Squirt a light coating of window cleaner on a sheet of paper (*don't* saturate it), and use the paper-feed button to send the sheet through the printer a few times. Then repeat the operation with several passes of dry paper to remove excess moisture from the rollers.

BONUS PRINTER TIP: You'll find dozens of additional tricks for laser printers at www.fixyourownprinter.com. (A buddy found a fix there for a paper pick-up problem on his HP LaserJet 5P printer, which is still chugging along after nine years.) Another great laser-advice site is PrinterTechs.com (find.pcworld.com/43524).

Quintuple Up Your Cables

THE ANNOYANCE: Since my MP3 player, my digital camera, my PDA, and all the other USB devices cluttering my office each came with its own USB cable, I had more USB cables snaking under my desk than Starbucks has lattes.

THE FIX: The $30 QuickConnect 5-in-1 USB cable from GoldX Products has five interchangeable tips that attach to either end—so instead of unplugging a cable when I want to switch from my MP3 player to an external hard drive, for example, I just change the cable's tip. The cable also connects my PDA directly to my printer. Go to find.pcworld.com/43518 for more.

FIGURE 1: Backing up is a breeze with the Network Storage Link.

No-Fuss Backups

THE ANNOYANCE: Though I love my home-office network, lugging my external USB hard drive to each computer one by one to back them up used to be a real bother. And no, no, no—I didn't want to set up a file server.

THE FIX: Instead of installing a server, I attached the drive to Linksys's Network Storage Link (see **FIGURE 1**), a $99 device that connects to a wired or wireless router. Now everyone on my network (well, my wife and I) can access the drive for quick and easy backups. Fair warning: During installation the Storage Link needs to format the external USB drive that it connects to, so make sure you've backed up the data on that drive first. Visit find.pcworld.com/43516 for more information on the Network Storage Link.

Lighten Your Power Load

THE ANNOYANCE: It never failed: I would fall in love with some handy little gadget for my PC only to find that it used an AC adapter large and heavy enough to double as an anchor for an oil tanker. I'm telling you, I amassed enough bricks under my desk to rebuild Hadrian's Wall.

THE FIX: A smart, though not cheap, fix for my power crisis came by way of the PowerCore DC Hub from GoldX (find.pcworld.com/43522; see **FIGURE 2**). This $30 hub powers up to five of my favorite electronic devices that would ordinarily need their own AC adapters. You can run one 12-volt, one 9-volt, and three 5-volt devices simultaneously. It's ideal for providing a constant stream of power to different devices. The downside? You also need to have the company's $30 PowerCore System Base Unit with surge protector to power the hub.

FIGURE 2: Clear the bricks away by plugging several devices into GoldX Products' PowerCore DC Hub.

PHOTOGRAPHS: MARC SIMON

Claria The adware removed most often by PestPatrol in June 2004

—PestPatrol

Quiet a Shrieking Monitor

THE ANNOYANCE: My six-year-old monitor, a 17-inch CRT that I affectionately call "Gramps," started making a high-pitched, drive-me-up-the-wall sound. I thought I'd landed in a low-budget sci-fi thriller.

THE FIX: This was no horror-movie soundtrack. It turns out the whine was caused by a vibrating flyback transformer (don't ask; it's a voltage thing). I was finally able to muzzle my monitor by changing its refresh rate. To do so, right-click the desktop and choose *Properties•Settings•Advanced*. In Windows 98 and Me, click the *Adapter* tab and change the setting under 'Refresh rate' to *72 Hz* or above (generally speaking, the higher your monitor's refresh rate, the less eyestrain you'll experience). In Windows XP and 2000, click the *Monitor* tab and change the setting under 'Screen refresh rate' (in XP, see **FIGURE 3**) or 'Refresh Frequency' (in 2000).

An alternate fix is to perform "percussive maintenance": Give the monitor a good, solid whack on the side. Really. This might stop the vibration, albeit temporarily. Keep in mind that repairing your monitor will likely cost more in the long run than replacing it. Of course, this may be your best excuse yet to buy that new LCD monitor you've had your eye on.

CD Burner Runs Hot and Cold

THE ANNOYANCE: How's this for irritating? Some days my external CD burner—which connected via FireWire to an add-in USB/FireWire card in my PC—worked perfectly, but other times my computer didn't recognize the darn thing. And here I thought it was the disc that was supposed to be burning, not me.

THE FIX: As I began to investigate the matter, my prime suspect was the add-in card. First I tried removing the FireWire cable from the PC, rebooting the system, and plugging in the cable again. Sometimes this got Windows to see the drive, but other times it didn't. The next thing I tried was plugging the drive into a different port on the FireWire card: I turned off my PC, unplugged the external drive, turned the PC back on again; then, once Windows had loaded, I reconnected the FireWire cable and powered up the CD burner. This finally cured my system's glitch, but if it doesn't do the trick for you, try moving the add-in card to a different PCI slot on your motherboard (just make sure that you don't plug it into the slot nearest the AGP video adapter, since that could cause motherboard woes). And check your PC's manual to confirm that you're using a "bus-mastered slot."

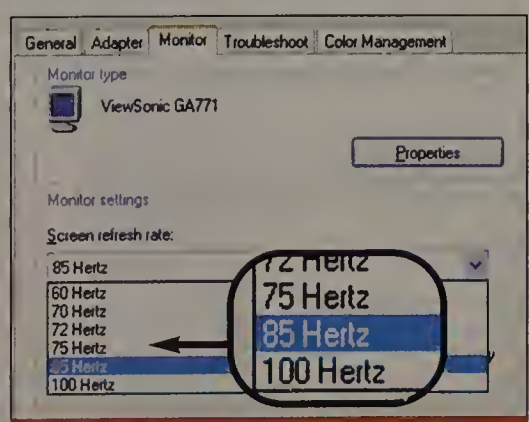


FIGURE 3: Change your monitor's refresh rate in Display Settings to keep it from emitting an ear-piercing whine.

WHAT BUGS ME

'My Security Software Turns Into a Pumpkin'

SYMANTEC'S OUTRAGEOUS CHARGES for its updates to Norton Antivirus and Norton Firewall are insufferable. The software basically turns into a pumpkin after a year of service unless you agree to keep paying an annual fee in perpetuity. *—Patricia Ridley, Bethesda, Maryland*

SYMANTEC'S RESPONSE: Most products purchased in retail outlets come with a free subscription that expires after one year. Customers can then purchase a renewal.

PATRICIA RIDLEY REPLIES: Their response doesn't tell me anything I didn't already know. The price they charge for updates is absurd. You can purchase the new version on EBay or at CompUSA with rebates so it's free or costs only a few dollars, which is a lot cheaper than the renewal price. I don't mind paying for updates, but spending more than it costs to buy the new version strikes me as not good business or customer service.

Straighten Up and Display Right

THE ANNOYANCE: My mother called recently with yet another gripe about her PC (kvetching must run in the family). This time she was upset because she couldn't figure out why all of the images on her screen were tilted at a slight angle. Sometimes I wish Mom weren't such a geek.

THE FIX: I quickly figured out that the problem was with her monitor's controls, which needed fine-tuning. Each monitor is different, but the controls are basically the same. Begin by looking for a button named 'Manual Image Adjustment' or something similar. The buttons on Mom's monitor enabled her to fix its tilt in a flash (with my help, of course). While she was fiddling, good ol' Mom found other settings that let her get more screen bang for her buck. Most monitors are factory-set with an annoying border, but she figured out how to enlarge her display to fill the entire screen by expanding the vertical and horizontal image areas until the black borders disappeared. (Note: Doing this may require that you adjust the image up or down, or maybe sideways, to keep it centered.) Sorry, folks: This screen-expansion trick works only on CRTs, not LCDs. ▶

159 Number of files, Registry keys, and directories Claria adds to a PC

—PestPatrol

Woeful **Windows**

One Click to Device Manager

THE ANNOYANCE: I often tweak my hardware settings in Windows' System Properties utility, but for the longest time opening it was a pain. Sure, I could get to it via the System applet in Control Panel or by right-clicking *My Computer* and choosing *Properties•Hardware•Device Manager* (or just *Properties•Device Manager* in Windows 98 and Me). But that was still too many clicks for my overworked fingers.

THE FIX: I finally wised up and created a desktop shortcut to System Properties. To make one of your own, right-click the desktop and select *New•Shortcut*. In Windows XP and 2000, type **devmgmt.msc** in the Location field. In Win 98 and Me, type **c:\windows\control.exe sysdm.cpl,system,1** in the 'Command line' field. (Note that this direction assumes that control.exe is in the Windows directory; in a very few systems, the executable file may be located elsewhere.) Click *Next*, give the shortcut a name—say, **Hardware**—and click *Finish*.

Restore MIA Quick Launch Shortcuts

THE ANNOYANCE: The other day I accidentally deleted the Show Desktop icon in my Quick Launch toolbar—you know, the one that minimizes all open windows and shows the desktop. And it gets worse: In the process of trying to get the shortcut back, I inadvertently erased the clock from my system tray.

THE FIX: Sometimes my tendency to tinker gets me into trouble, but fortunately these two misadventures were easy to recover from. To restore the clock, first right-click the taskbar and select *Properties*. In Windows XP, check *Show the clock* under 'Notification area' on the Taskbar tab and click *OK*. In Windows 98, Me, and 2000, check *Show clock* on the General tab (Taskbar Options in 98) and click *OK*.

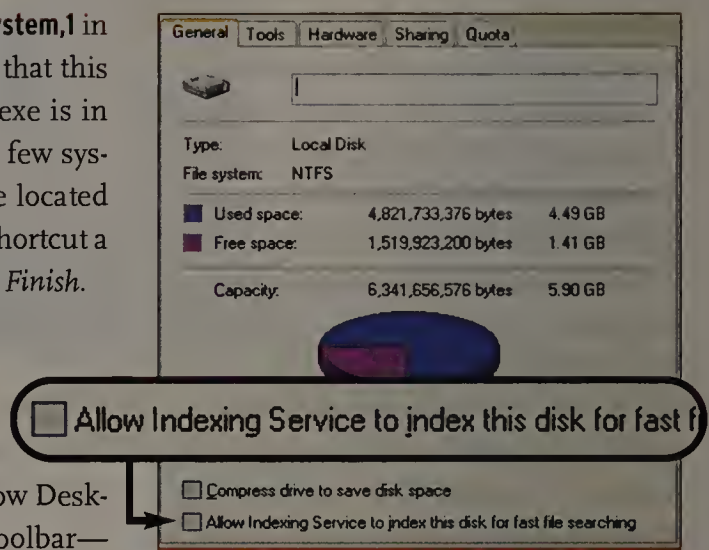


FIGURE 4: You can defragment your disk without interruption if you first make sure that Windows' indexing is turned off.

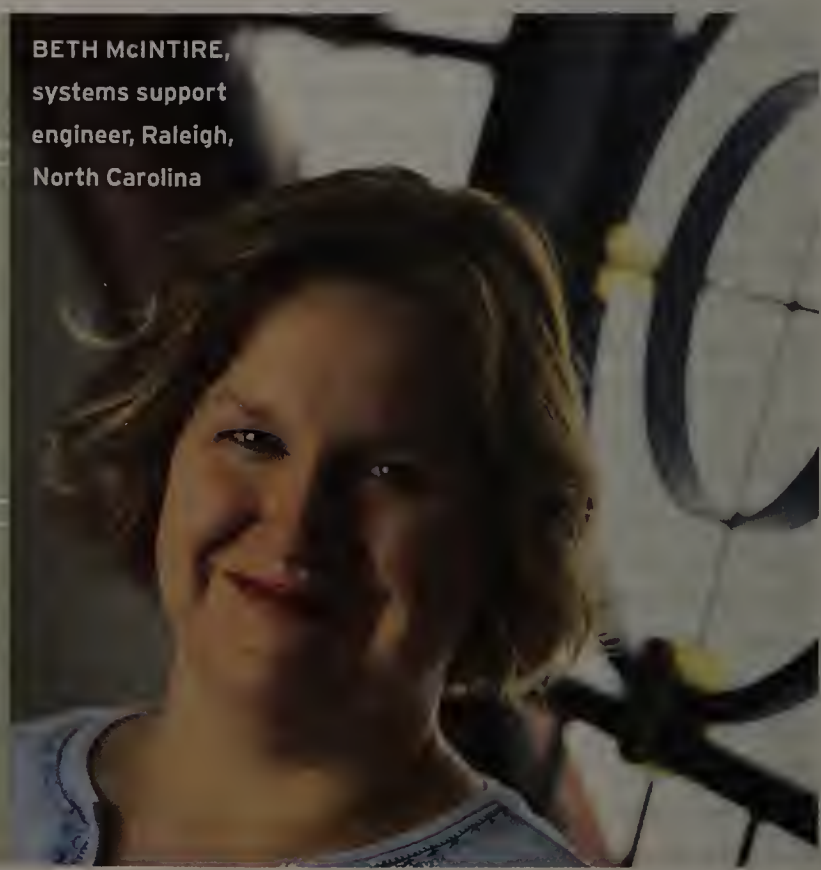
To retrieve my Show Desktop shortcut, I used a great free utility written by Doug Knox and aptly named "Restore Missing Show Desktop Icon to Quick Launch." Go to find.pcworld.com/43254 to download the utility. After you unzip and install the program, run it to recover your shortcut. Now you can get back to fiddling with your PC's settings without losing track of time.

MY FAVORITE FIX

Ounce of Spam Prevention

THE ANNOYANCE: If someone sends me a stupid "forward this to all your friends" urban-legend e-mail, I look it up on About.com's Urban Legends and Folklore page [find.pcworld.com/43616] and then send them the link. It's amazing what people will believe just because it comes in a nicely typed e-mail. I guess I've embarrassed enough people that they don't send those messages to me anymore, but I still get lots of other spam.

THE FIX: To keep this and other junk out of my inbox, I use Outlook Express's Message Rules to sort messages. I can make sure mail from people I know goes into a certain folder so that I don't miss anything important, and I filter out obvious spam (anything containing the words *viagra* or *mortgage*, for example). Though this doesn't eliminate all spam, every little bit helps. [Visit find.pcworld.com/43614 for instructions on creating e-mail filters.]



BETH McINTIRE, systems support engineer, Raleigh, North Carolina

PHOTOGRAPH: CHARLES GUPTON

6% Percentage of Internet ads that popped atop or under Web pages

–NIELSEN/NETRATINGS ADRELEVANCE

Stop Defragus Interruptus

THE ANNOYANCE: Whenever I tried to defrag the hard drive on my old Windows 98 PC, the Disk Defragmenter tool would start, run to about 3 percent, and then restart—over and over. This happened even though I closed all of my open applications and shut down my antivirus, firewall, and other background programs.

THE FIX: Some program was interrupting the defrag by running in the background. I suspected Windows' indexing function. Indexing is supposed to make searches faster, but I've never noticed a speed-up. To turn off indexing in Windows 98 and Me, click *Start•Run*, type **msconfig**, and press **<Enter>**. If you see an entry for FastFind, uncheck it. In Windows XP, right-click the C: drive in My Computer or any Explorer window, select *Properties•General*, and uncheck *Allow Indexing Service to index this disk for fast file searching* (see **FIGURE 4**). Repeat these steps for all your hard-drive volumes.

Pump Up Your Icons

THE ANNOYANCE: I set my large, 21-inch monitor at a screen resolution of 1152 by 864 pixels to get a bigger view of all my open applications. That was cool, but what wasn't was the microscopic size of the desktop icons and fonts at that resolution.

THE FIX: Changing the size of your desktop icons may also change their positions on the screen, which is an annoyance in itself. So before you do anything, browse to find.pcworld.com/43562 and download the free Save My Desktop utility. Install and run the program before proceeding. Now, to adjust the size of your desktop icons, right-click the desktop and choose *Properties•Appearance* (and then, in Windows XP, click *Advanced*). Choose *Icon* from the 'Item' drop-down menu, and increase the number of pixels under 'Size'. Keep in mind, however, that many of your icons will look blurry when you make them bigger. A better way to raise your icon profile is to use BestView (find.pcworld.com/43564), a free online tool that sets your icons to normal, large, or extra-large. (You may be asked for permission to download an ActiveX control.)

BONUS XP TIP: To make your Quick Launch icons bigger, right-click the toolbar's title (or the bar to its left), make sure that 'Lock the Taskbar' is unchecked, and select *View•Large Icons*. Neat, eh?

WHAT BUGS ME

'AOL CD-ROMs Harm the Environment'

AMERICA ONLINE'S seemingly never-ending flood of software CD-ROMs must be creating an enormous landfill or disposal problem across the nation. I once crafted a lamp out of about 30 of the free discs, but I gave up trying to deal with them a long time ago. *–Diane George, via the Internet*

AOL'S RESPONSE: America Online failed to respond to our numerous telephone requests for comment. (Full disclosure: *PC World* provides some content to AOL.)

DIANE GEORGE REPLIES: What *can* they say? The ongoing distribution of the discs is not defensible on any grounds other than the successful acquisition of new customers. Until the cost to AOL of its shotgun approach to marketing exceeds the benefit, the public will continue to pay—at least environmentally. Other companies, like Dell and HP, have recycling programs, demonstrating at least some commitment to corporate responsibility.

Tangled **Web**

Give Me Back Internet Explorer

THE ANNOYANCE: I experimented with a new browser, didn't like it, and uninstalled it; but afterward when I clicked a link in an e-mail message, the other browser tried to open instead of Internet Explorer.

THE FIX: To reset IE as your default browser, open the program and click *Tools•Internet Options*. Choose the *Programs* tab and select *Internet Explorer should check to see whether it is the default browser* near the bottom (see **FIGURE 5**). If your third-party IE shell stops this from working, download Jem Berkes's SetBrowser (find.pcworld.com/43926), a free utility that uses a Registry setting to make IE your one and only.

Revive IE's Disabled Back Button

THE ANNOYANCE: Sometimes when I browsed with Internet Explorer, neither the Back button nor the <Backspace> key could return me to the prior Web page. Instead they sent me to the same page I was already on. How loopy is that?

THE FIX: Some sites use redirects in such a way that clicking the Back button puts you in a loop between the redirect page and the page you're trying to get away from. To get around these redirects, click the down arrow next to the Back button to display a list of the last ten pages you have visited. Go back to at least the second earlier entry to avoid the redirect page. The alternative is to click the Back button twice in quick succession so that you can beat the redirect at its own game. ▶

CNN Web site where you are most likely to encounter a pop-up ad

–NIELSEN/NETRATINGS ADRELEVANCE

Skip the Registration

THE ANNOYANCE: I really disliked giving every online news site I visited my personal information. Not only did it invade my privacy (I know, I could've fibbed), but it irritated me and took too much time.

THE FIX: True, many people use fake data for these annoying—and sometimes lengthy—registration forms. Me? Ethical considerations aside, I don't get bogged down with any of them now. Instead I use www.bugmenot.com, a nifty site that offers a database of accounts—passwords and user IDs—that let me gain access to registration-required news sites.

Bye-Bye, Busy Signal

THE ANNOYANCE: Whenever I used my dial-up account, people would be miffed because they always got a busy signal when they called me while I was online.

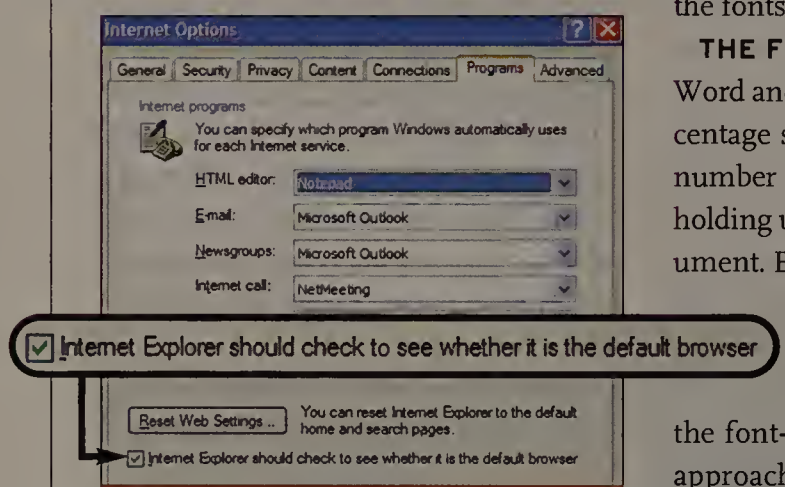


FIGURE 5: Keep Internet Explorer as your default browser by checking this setting.

THE FIX: With the free Web product BuzMe (www.buzme.com), your callers hear a greeting recorded in your own golden voice. A box on your screen tells you that someone's calling (you'll see who it is if your pal hasn't blocked caller ID). You can type a short reply that is read to the caller by a robotic voice, send the call to voice mail, reject the call, or grab the phone and say hello. BuzMe requires your phone company's call-forwarding service, which costs about $4 per month.

Application Aggravation

Zoom in Word and Excel

THE ANNOYANCE: I often get Word documents from a buddy who sets the fonts on his 15-inch CRT at a space-saving 10 points. On my high-end LCD, the fonts look minuscule. Of course, the opposite occurs, too. When he opens Word docs on his screen from people using LCDs, the fonts are humongous.

THE FIX: On the Standard toolbar in Word and Excel is a Zoom box with a percentage setting. Increase or decrease the number to zoom in or out as if you were holding up a magnifying glass to the document. Even better, hold the **<Ctrl>** key as you roll your mouse wheel up (for larger) or down (for smaller). These tricks don't change the font-size setting. By the way, if this approach doesn't work, upgrading your mouse driver may do the job; for some drivers, changing an option is required. If you don't have a wheeled mouse, read about Windows' Magnifier tool in Scott Dunn's *Windows Tips* column from last May (find.pcworld.com/43594).

Tell Spam From Shinola

THE ANNOYANCE: I use every trick I can to avoid spam, but for a while I was *too* successful. Many great—and legitimate—lists and newsletters that I subscribed to weren't being delivered to my inbox.

THE FIX: I added each newsletter's sending address to my spam filter's white list. If you have a recent e-mail from the sender, you're all set; if not, head to the newsletter site to get the sending address. In many Web-based e-mail services, clicking 'not spam' is often adequate. If you aren't receiving the mail at all, you'll have to add the newsletter address manually. In MSN Hotmail, click *Mail•Options* (on the far right), and then select *Junk E-Mail Protection•Safe List*. In Yahoo Mail, click *Mail Options* (on the right), choose *Filters•Add*, and enter the newsletter's sending address in the top row labeled 'From header'. In the 'Move the message to' drop-down list, choose *Inbox*. In AOL 9, open the newsletter and click *Add Address*, which adds it to your 'People I Know' list.

Excel's <Enter> Alternatives

THE ANNOYANCE: Whenever I used Excel, the way the <Enter> key worked would drive me nuts. Though I wanted it to take me one cell to the right, it always took me down the column instead.

THE FIX: After doing a little digging, I found out that you can make the <Enter> key move the active cell any way you want, provided it's up, down, left, or right (or even not at all). To change your <Enter> key's setting in Excel, click *Tools•Options•Edit* and choose your direction from the drop-down menu. Or uncheck 'Move selection after Enter' to keep the current cell active when you use <Enter>. ▶

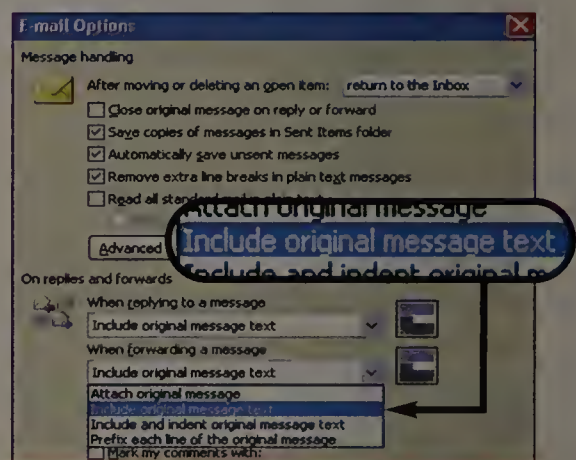


FIGURE 6: Boot the brackets from your Outlook replies and forwarded messages via the E-mail Options dialog box.

16.7 billion Spam e-mail messages sent daily, worldwide, in 2004

–IDC

World's smallest/lightest high-resolution camcorder and camera **combination!**

FISHER MULTIMEDIA

One Camera, Twice The Enjoyment...

Plus, it's easy editing with the Fisher High-Resolution Digital Pocket CameraCorder™

Take DVD-like quality digital video. Take 3.2 mega-pixel digital still pictures. Or take booth at once! The Fisher CameraCorder™ is an all-in-one marvel (just 5.4 ounces) that has its own high-performance movie making and still picture software. Use the memory card in your PC or Mac or through the camera/docking station to connect to the USB port for fast downloading. Edit video or still material for transfer to DVD, video CD disc or email attachment.

New MPEG-4 technology optimizes the storage capacity for DVD-like quality video (30 frames/sec.). The Fisher CameraCorder™, which includes a 512-megabyte card, can store 1/2 hour of DVD-like video or over 3,900 photos.

Take it anywhere and be ready for any video/photo opportunity.

The Revolutionary Fisher CameraCorder™ is engineered by SANYO, one of the world's foremost digital imaging R & D sources.

www.fisherav.com

amazon.com and you're done. The Apple Store ULTIMATE ELECTRONICS

SANYO

IMHO You'll Be ROTFLOL

THE ANNOYANCE: I do okay deciphering most e-mail messages, but I was stymied when it came to those wacky messaging acronyms. I never knew whether to LOL, sport a VBG, or be MAHANTIA.

THE FIX: FWIW (For what it's worth) and IMHO (in my humble opinion), these abbreviations can be TFAOCTKS (tough for an old codger to keep straight). IIRC (If I recall correctly), there's a handy online spot for sorting them out: the Acronym Finder (www.acronymfinder.com). Search for an abbreviation, and you, too, can be ROTFLOL (rolling on the floor laughing out loud). SGTM (Sounds good to me).

Excise Your E-Mail Brackets

THE ANNOYANCE: I don't get why people send me e-mail messages with columns of brackets before each line. In fact, I've seen some messages (mainly from my editor) that contain more brackets than words. (On second thought, maybe I shouldn't be complaining.)

THE FIX: Some e-mail programs insert a bracket automatically at the beginning of each line of the original text when you include it in your reply or forward it. Each time the message is replied to or forwarded, another layer of brackets is tacked on. To banish the brackets in Outlook Express, click *Tools•Options•Send*. Under 'Mail Sending Format', select *Plain Text Settings* and uncheck 'Indent the original text with > when replying or forwarding'. In Outlook, click *Tools•Options•Preferences•E-mail Options*, and under 'On replies and forwards', change both fields to anything except 'Prefix each line of the original message' (see **FIGURE 6**). In Eudora 5 or 6, reset the <ReplyPrefix>: Go to Eudora's tech support site (find.pcworld.com/43814), and scroll down to and click *<ReplyPrefix>* to open the Change Option dialog box back in Eudora. Make sure that the 'New value' field is blank, and click *OK*. Repeat the process for <QuotePrefix>. ▶

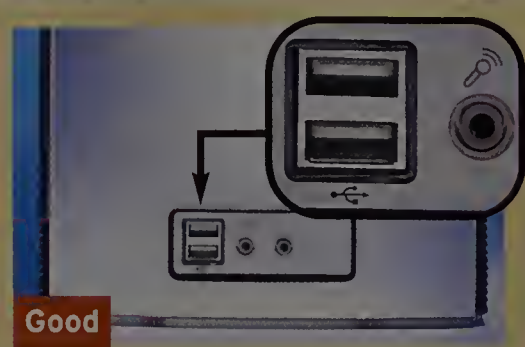
DESIGN NO-NO'S

Good vs. Bad Tech Implementations

WE'VE ALL HAD OCCASION TO MARVEL at the ingenuity of the people who design our hardware and software, but just as often some feature leaves us shaking our heads. Here are three products that got it right, and three others that missed the mark.

MP3 player carrying cases: **GOOD:** The IRiver IHP-200 (find.pcworld.com/43910) provides access to the controls even with the case on. **BAD:** With the Apple IPod (find.pcworld.com/43912), you have to take the case off to work the controls.

Changing browser font size with your mouse's scroll wheel: **GOOD:** Opera enlarges both the page's images and its text. **BAD:** Internet Explorer enlarges only the text, leaving images their original size and throwing the page's design out of whack.



USB ports: **GOOD:** The system on the left provides more-versatile powered USB ports on the case front. **BAD:** The only USB ports on the front are not powered.

PHOTOGRAPHS: MARC SIMON

129 Number of icons/links Yahoo Messenger adds to a PC by default

–PC World Research

newegg.com™

ONCE YOU KNOW, YOU NEWEGG.

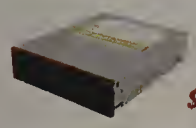
DVD Burners

BenQ

$99.00

16x Dual Layer DVD±RW Rewriter Model# DW1610BGE

NEC



$75.99

8x Dual Layer DVD±RW
Model# ND-2510ABLK - OEM

PLEXTOR

$142.99

12x DVD±RW Drive 8MB Buffer
ATAPI/E-IDE Model# PX-712A

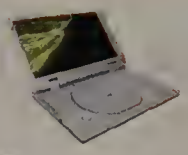
Portable DVD Players

AUDIOVOX CORPORATION

$216.99

D1730 7" Ultra Slim 16:9
Widescreen Personal DVD Player

Mintek



$379.99

MDP-1010 10" 16:9
Widescreen LCD Monitor

GO.VIDEO®

$289.00

DP-8440 8.4" 16:9 Widescreen
Progressive Scan w/ Remote Control

Hard Drives

Western Digital

$62.50

80GB Speical Edition 7200RPM IDE
Ultra ATA100 Model# WD800JB - OEM

Maxtor

$46.00

40GB 7200RPM IDE Ultra
ATA133 Model# 6E040L0 - OEM

SAMSUNG

$88.99

160GB 7200RPM IDE Ultra
ATA133 Model# SP1604N - OEM

Software

ULEAD

$76.00

VideoStudio 8
Home Video Editing

Adobe

$192.00

Photoshop CS
Windows Edition

PINNACLE SYSTEMS

$84.00

Studio AV/DV 9
Creative Video Editing

Software

Microsoft

$357.00

Office Professional
Edition 2003

Microsoft

Windows XP
Home Edition
Upgrade Version

$102.00

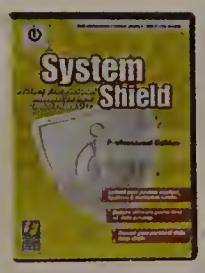
Microsoft

Windows XP
Pro Edition Upgrade
Academic Version

$82.00

Software

iolo



$99.99

System Shield Pro
Identity Protection Software

McAfee SECURITY

Antispyware
1.0 Advanced
Auto Protect

$25.69

symantec.

$19.99

Norton SystemWorks
Pro 2003 w/ 1 Year Live Update

Visit Newegg.com for today's prices and complete product line.

- *98% of orders ship within 1 business day*
- *99,000+ product reviews from customers*
- *9,200+ customer testimonials*
- *"A" rating on ANY merchant ranking site*

Free Shipping* >> FedEx Express Saver Shipping

SHOPPERS' COMPUTER SHOPPER 2003 CHOICE

Best Place to Buy Components

©2004 Newegg.com Inc. All rights reserved. Newegg.com is not responsible for typographical errors. All typographical errors are subject to correction. All Items are sold as retail unless otherwise noted. OEM products may be sold without packaging, documentation or other articles. All prices and specifications are subject to change without notice. Prices do and will fluctuate dramatically due to the nature of the market. The listed prices were the current prices at the time this ad was submitted to the publisher on 8/5/04. *On These Advertised Specials.

PDA Problems

Emergency Power for Palms

THE ANNOYANCE: I love my Palm PDA, but I'm lucky if I get a day's worth of battery life out of it. At the office I can easily recharge it while I work; when traveling, however, I used to have to schlep the cradle with me to recharge the darn thing.

THE FIX: Now I squeeze more juice out of my Palm by turning the gizmo's backlight brightness way down. When I'm on the road, I leave the cradle at home and instead use Tech Center Labs' $15 Power Adapter for Universal Connector Palms (find.pcworld.com/43604, see **FIGURE 7**). The device connects the cradle's AC adapter directly to my Palm. If you prefer, you can run your Palm with the company's $15 AA Emergency Charger, which uses rechargeable or regular AA batteries. And in dire emergencies, the company's 9-volt Emergency Charger, a $20 gadget, will give your Palm enough of a boost for you to win that last hand of solitaire.

Pocket PC File and Battery Woes

THE ANNOYANCE: That last tip was handy for Palm users, but what about all you Pocket PC users out there? You have two problems. Microsoft hides your battery-life indicator in the Settings•System•Power folder, requiring an annoying three clicks each time you want to see how much battery life you have left. And like Windows, the Pocket PC platform doesn't have a useful file management tool—you're stuck using the dreadful File Explorer to keep tabs on your files.

THE FIX: First, browse to find.pcworld.com/43606 to grab a trial copy of Omega One's Battery Pack Pro, a $20 utility that not only displays a desktop bar indicating your Pocket PC's battery life, but also measures its expected life based on how you use the device. Visit find.pcworld.com/43618 for more information. Next, replace File Explorer with Resco's $25 Explorer 2003—a great productivity tool that allows you to move your files in a single window, as well as to search, zip, and encrypt files. Go to find.pcworld.com/43608 to download the trial version.

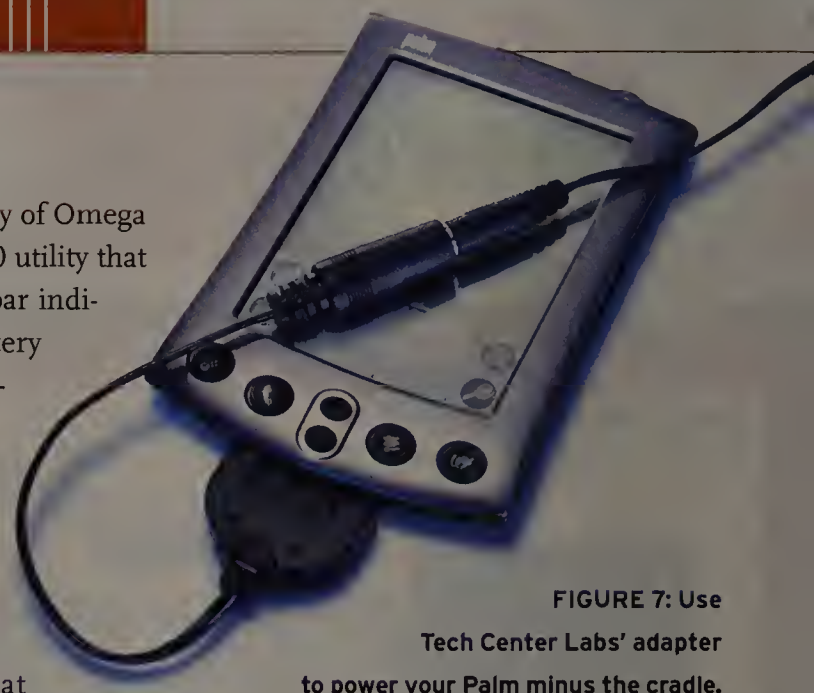


FIGURE 7: Use Tech Center Labs' adapter to power your Palm minus the cradle.

Media Player Madness

Good Riddance to Real

THE ANNOYANCE: The RealPlayer media player from RealNetworks added far too many icons to my desktop, and it constantly asked me if I wanted to change my media-file associations. RealPlayer also displayed lots of ads and pop-ups. And my firewall frequently alerted me that RealPlayer was trying to phone home.

THE FIX: It's easy to dump RealPlayer—and Apple's equally insistent QuickTime video player—and replace them with an app that is absolutely free and does just as good a job. First, uninstall RealPlayer and QuickTime via Windows' Add or Remove Programs applet in Control Panel. Then go to find.pcworld.com/43610 to download Real Alternative, which plays RealAudio and RealMedia files and has plug-ins for Internet Explorer, Opera, Netscape, and Mozilla, so you can play music and videos right off the Web. (There's also a QuickTime Alternative.) If your media-file associations go wacko, visit find.pcworld.com/43816 to read Lincoln Spector's instructions for reassociating your file types.

AutoPlay, Go Away (or Come Back)

THE ANNOYANCE: The other day I inserted a music CD in my CD-ROM drive and clicked 'Open folder to view file using Windows Explorer.' But then I foolishly clicked 'Always do the selected action'.

THE FIX: To reset Windows' AutoPlay, open *My Computer*, right-click your CD drive, select *Properties•AutoPlay*, and click *Restore Defaults*. If the AutoPlay tab is missing in XP or 2000, close the Properties dialog box, click *Start•Run*, type **services.msc**, press **<Enter>**, scroll to and double-click *Shell Hardware Detection*, set the 'Startup type' drop-down box to *Automatic*, choose *Start* or *Resume*, click *OK*, and close the Services window. The CD drive's Properties dialog box has other AutoPlay options for pictures, video files, and other CD content; this is your chance to reset them to their default values as well. ■

Steve Bass is the author of PC Annoyances: How to Fix the Most Annoying Things About Your Personal Computer, *published by O'Reilly (find.pcworld.com/43818).*

PHOTOGRAPH: MARC SIMON

10-15 Number of new viruses and worms Symantec identifies daily

—SYMANTEC

LG FLATRON LCDs.

Available in LG, XLG and XXLG.

©2004 LG Electronics U.S.A., Inc.

Because one size does not fit all.

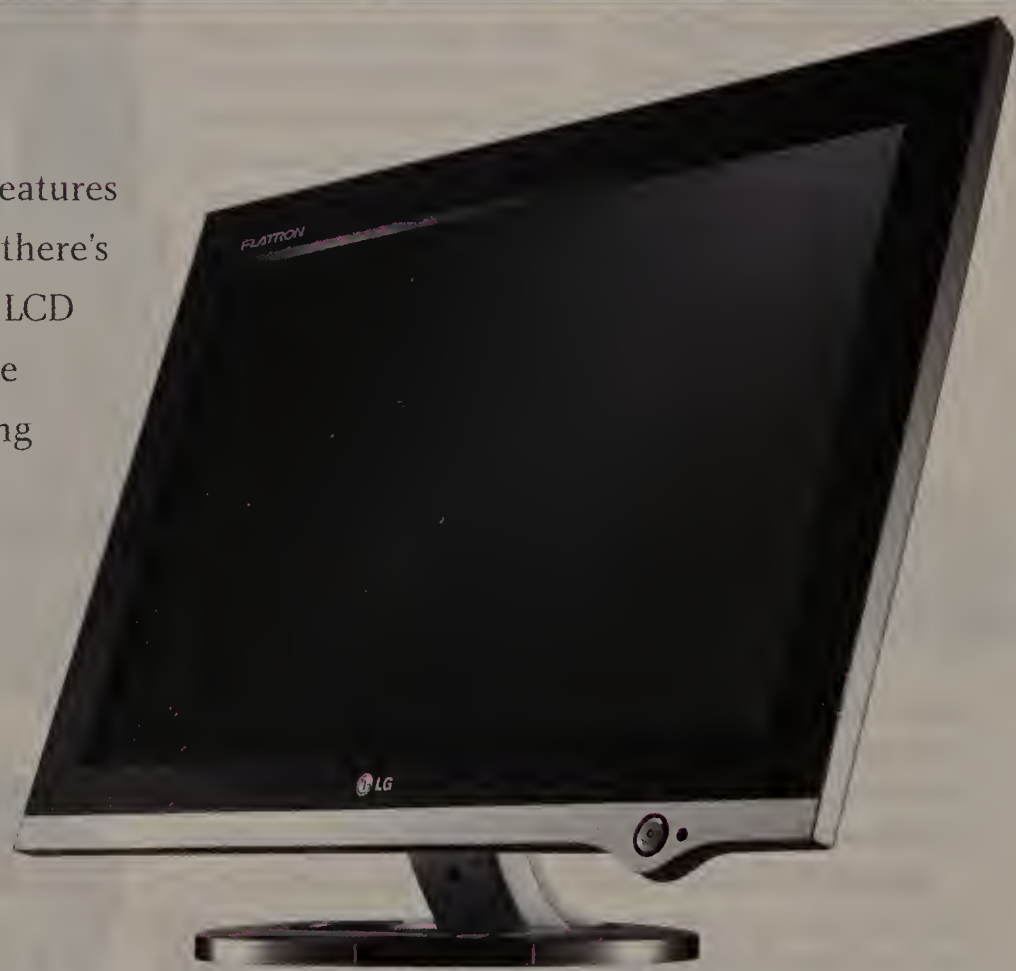
With screen sizes from 15" to 30", offering features such as DVI and HD inputs or TV function, there's a perfect LG fit for every home or office. LG LCD monitors offer exceptional quality, innovative features and are all backed by an outstanding 3-year replacement warranty.

The view is better with LG.

Available at:

BEST BUY

BestBuy.com



L2320A - 23" Wide-Screen HD/WUXGA LCD Monitor

www.LGUSA.com

FLATRON®

LG

Life's Good

Hall of Shame

We spotlight people and products that pester us...

Demerit Badge

DMCA cosponsor Sen. Orrin Hatch, R-Utah

WE SUPPORT copyright—let's make that clear right off the bat; and it makes sense to clarify copyright law for the digital age. But the Digital Millennium Copyright Act is a perfect example of how not to do it. This overly broad act protects even laughably bad copy protection systems, letting vastly inferior products succeed by relying on a legal loophole. Worse, the DMCA stifles innovation. We can't count how often vendors building new wireless audio devices or digital media hubs have told us that they don't know if the DMCA will let them include a feature. That can't be good for any of us.

SEN. Orrin Hatch, R-Utah

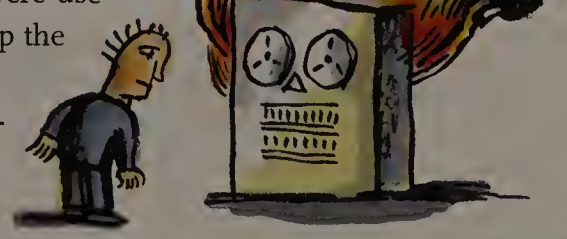
Historical Hassles

NO NEW TECHNOLOGY is perfect. Every time-saving advance since the wheel has carried its own unique set of difficulties. Here are a few historical annoyances you may not have heard of.

MID-NINETEENTH CENTURY Early pocket watches used by train engineers weren't very accurate, and each town's official time was slightly different, leading to head-on collisions between locomotives.

LATE NINETEENTH CENTURY Telegraph lines were useful, but insecure—anyone with a receiver could tap the line and listen in. Simple encryption was the fix.

1960s The UNIVAC mainframe came with a high-speed printer that got so hot it was equipped with a Fire indicator and an Extinguish button.



The Dirty Dozen

WE ASKED more than 250 *PC World* readers about a raft of tech annoyances. These are the worst, rated on a scale of 1 (not annoying) to 7 (extremely annoying).

1. Sites that hijack your browser home page	6.87
2. Downloads that come with spyware	6.80
3. Services you can't unsubscribe from	6.60
4. Viagra/prescription-drug spam	6.54
5. Animated ads blocking out a Web page	6.52
6. Pornographic spam	6.50
7. Pop-up/pop-under ads	6.47
8. Nigerian scam spam	6.31
9. Overpriced printer ink	6.18
10. All the work required to get a rebate	6.10
11. (tie) RealPlayer marketing tactics	5.97
11. (tie) Cryptic error text	5.97

Microsoft Annoyance Tracker

MICROSOFT has been annoying PC users for decades. But the company isn't all bad. Here's how it's fared over the years.

Helpful

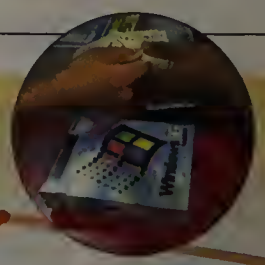
Annoying

1977-1981 Sells a programming language (BASIC) and an OS (DOS) that it hasn't written yet.

1985 A buggy Windows 1.0 is finally released. Most of its bugs aren't fixed until 1987.

1993 Investigated for exclusionary licensing practices that tie other Microsoft products to its operating systems.

1995 Blowout launch for Windows 95—a more stable, 32-bit Windows.



PHOTOGRAPHS (CLOCKWISE FROM TOP): COURTESY OF ORRIN HATCH; BROOKS KRAFT/CORBIS; DEBORAH FEINGOLD/CORBIS; ILLUSTRATIONS: ROBERT NEUBECKER

& Hall of Fame

and the heroes saving us from annoyances.

PHOTOGRAPHS (CLOCKWISE FROM TOP): COURTESY OF HEWLETT-PACKARD; RICK RIZNER; NAASHON ZALK/CORBIS; ILLUSTRATION: ROBERT NEUBECKER

The Good Citizen Awards

IMAGINE A WORLD with Lex Luthor and Dr. Octopus, but no Superman or Spider-Man. Not a pretty image, is it? Well, the computing world has its superheroes, too: people and companies working to eliminate hassles like spyware, spam, and crazy rebate policies. Here, then, are our awards to six courageous annoyance fighters.

THE CLEAN CLOSET AWARD to Hewlett-Packard, for its extensive programs to recycle PCs, printers, and ink cartridges. Here's a company that realizes you are more likely to buy new stuff from a company that helps you safely get rid of your old stuff.

THE OPEN WINDOWS AWARD to Mark Russinovich and Bryce Cogswell, the brainy coders behind www.sysinternals.com. The site's collection of freeware utilities makes it easy to get the kind of under-the-hood info that Windows either hides or doesn't provide at all.

INSIDE HP's PC recycling plant

THE INBOX RELIEF AWARD to Paul Graham and Tim Peters, who developed SpamBayes, the pioneering antispam software that's both free and effective.

THE BETTER BROWSER AWARD to the programmers of Mozilla, who have managed to build not one, but two browsers that are faster, smaller, more secure, and easier to use than the one created by the world's biggest software firm.

THE REBATE RELIEF AWARD to Best Buy, Circuit City, CompUSA, Costco, and other stores that actually make it easier to collect rebates by printing out separate rebate receipts at the cash register.

THE SENSIBLE OS PRICING AWARD to Apple Computer, for charging $129 for one copy of OS X Panther, but a very affordable $199 for a five-license family pack.

Let's Fix This!

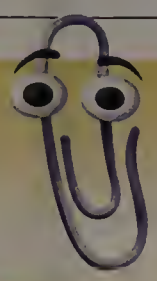
A COUPLE OF suggestions that could simplify computing:

Lose the tiny wires.

BUILDING A PC shouldn't require the steady hands of a grizzled FBI bomb squad veteran. A standardized block connector could easily replace those little wires that go from your case to the motherboard. Until then, remember: It's always the green wire.

Stop the CD swap.

PRODUCT ACTIVATION works. So why do you have to keep a CD in the drive to play a game? ■



1997
Clippy the officious office assistant begins harassing Office users.

1996
Internet Explorer 3.0 is released. Nine days later, the first IE security hole is reported.

2000
The Bill and Melinda Gates Foundation earmarks $27 billion for global health and learning.

2001
Windows XP released to strong reviews.

2002
Trustworthy Computing pledge promises to make security a main priority. IE patches continue at normal frequency.

Keep It Simple

Cut the clutter on your PC and you can stop aggravations before they begin. Our 50 tips show you how to simplify Windows and your system from startup to shutdown.

WHEN SOMETHING annoys you, you might choose to get mad, or to get even. But there is a third path: Simplification. Eliminate unnecessary programs, icons, and Windows services, and you'll rid yourself of many of the sources of your PC angst. You'll better see the way to enlightenment (and that file you're working on) because so much stuff won't block your view.

You already have most of the tools you need. Most of the fixes we prescribe involve tweaking Windows and your programs so they only do what you want, and no more. We also recommend simpler programs that can replace some common but bloated and expensive apps. And if you go too far and instead turn your PC into a simpleton, we'll help you back to the path. ▶

92 Streamline Startup and Shutdown

93 Cut Desktop and Menu Clutter

99 Whack Application Weeds

100 Achieve Hardware Nirvana

BY SCOTT SPANBAUER

ILLUSTRATIONS BY MICHAEL WITTE

PC WORLD PROFESSIONAL DISCOUNT

76% OFF plus, FREE Windows Tips Mouse Pad

Cover Price	You Save	Your Cost
~~$83.88~~	$63.91	$19.97

Yes! Please enter my subscription (12 monthly issues) to PC World at the low rate of only $19.97. I will save **76% OFF** the annual newsstand rate and receive PC World's Windows Tips Mouse Pad FREE with my order.

Name _____

Address _____

_____

City _____ State _____ Zip _____

Email (optional) _____

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

Offer good in the US only. In Canada, please add $12 USD per subscription for postage, plus 7% GST (#R124669680). All other countries send $49.97 to PC World, P.O. Box 37560, Boone IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4AN2DT71

FOR FASTEST SERVICE CALL
1-800-825-7595
OR FAX 515-432-6994

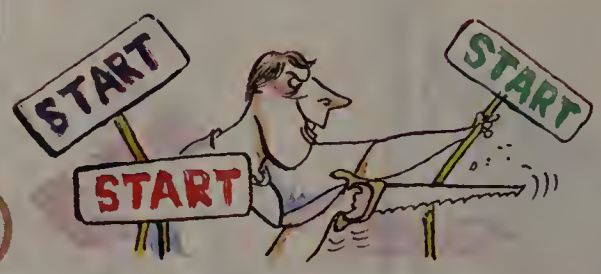
Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD
SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558



Streamline **Startup** and **Shutdown**

YOU DON'T BOOT and reboot your PC as frequently as you once did, thanks in part to Windows' greater stability in 2000 and XP. Nevertheless, those who seek the path of simplicity should start by closely examining the startup process. The fewer superfluous programs that load at startup, the faster the PC will boot and the more memory will be available for programs. As a side benefit, keeping tabs on startup programs will help you prevent problems caused by spyware apps or viruses.

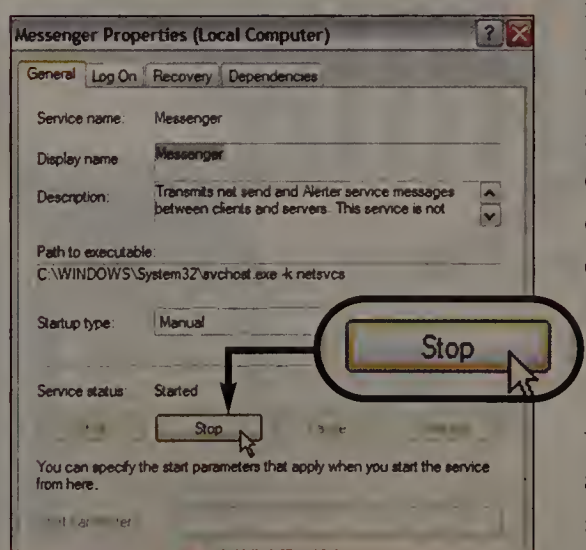
Your first step to relieving the traffic jam at startup is to uninstall programs you never use, especially the ones that always put an icon in the system tray. Look first in the Start menu for an uninstall icon alongside the program's main icon. If no uninstall icon appears, launch *Add or Remove Programs* in Windows' Control Panel, highlight the unneeded program, and then click the *Remove* or *Change/Remove* button to start the process.

Once you've done that, you can take care of the programs that you probably want to keep installed but don't need to have running in the background all the time. One common example is Apple's QuickTime (which loads a file called qttask.exe at startup), or the QuickPlay component of Musicmatch Jukebox. Every time you watch a QuickTime movie, for example, the program puts itself back in the system tray. Get rid of such programs from your system tray, and you'll simplify your startup—but you can still use the programs when you want them. To do this, you must look in all the places Windows uses to launch programs at startup, and disable the unwanted ones.

SLIM DOWN YOUR STARTUP

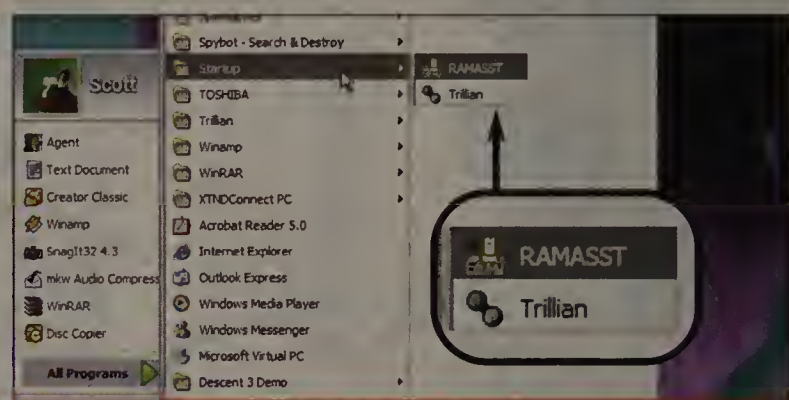
WINDOWS CAN LAUNCH programs automatically at startup four ways: with a shortcut to a program in the Start menu's Startup folder (in Start•All Programs•Startup); an entry in the Windows Registry; a reference in one of Windows' old-school initialization files like system.ini or autoexec.bat; or (if the program falls into a special category called a *service*) in the Computer Management console. You'll need to go through each location and disable or remove references to programs you don't want to run every time you boot.

One easy way to accomplish the task is to use Windows' System Configuration Utility, a tool that can remove such references from all four places. (If you're running Windows 2000, get the tool from find.pcworld.com/43692 and save it to the c:\winnt\system32 folder, first.)



SAY BYE-BYE to the Windows services you don't need, like Messenger, above.

Choose *Start•Run*, enter **msconfig** in the *Open* field, and click *OK* to launch the tool. Items listed under the *Startup* tab come from the Registry's startup path; though it's highly unlikely that a program might use the system.ini or win.ini file to start itself up, you can browse those tabs for a particular program if you can't find it anywhere else. You can manage services through Msconfig as well, but we'll get to a better way to turn them off in a minute.



GIVE STARTUP ITEMS the boot from the Start menu if you don't urgently need to run them the minute you boot Windows.

To prevent a program from starting up, clear the check box next to it, click *OK*, and reboot. If problems occur as a result, just go back into the System Configuration Utility, and fill in the check box again to reenable the program.

You can save boot time and free some memory by stopping services you don't need, and then setting them so they don't start with Windows. Open the Services Console: Right-click *My Computer*, and select *Manage*. When the management console window opens, in the left pane double-click *Services and Applications* (or click its plus sign) to expand that item, and then select the *Services* item that appears beneath it.

The Services Console shows you which services are running (the ones that are listed as 'Started') and how a service is set up to start: Automatic (meaning it launches the service each time you boot up, whether you need it or not), Manual (it won't run at startup, but Windows may

51 Number of security advisories released in 2003 by Microsoft

—MICROSOFT

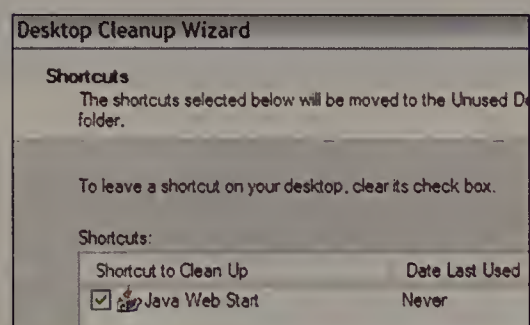
launch the service if the operating system needs it to do something), or Disabled (it can't run at all, even if Windows needs it).

Of course, disabling one or more services that Windows might need in order to function could cause some problems. UK Security Online (find.pcworld.com/43694) maintains a helpful list of every Microsoft service, along with detailed information to help you decide what you can safely disable.

STANDBY TO SPEEDUP

NO MATTER how many programs and services you prune away, starting up and shutting down will still consume time. There's a better way to put your computer to bed: Put your PC into Standby or Hibernate mode instead of shutting it down completely. Standby powers off the display and drives but maintains power to the CPU and memory, allowing you to wake your PC and get back to work in a few seconds. Hibernate writes the contents of memory to disk and then shuts the PC off completely; on rebooting, your PC reads back the session saved to disk so you can start up exactly where you left off.

Hibernation makes the most sense for notebooks (where you want to maximize battery life), while Standby suits desktop PCs. Double-click the *Power Options* applet in the Control Panel; select the *Power Schemes* tab; adjust the monitor, hard-disk, and standby options to your satisfaction; and then click *OK*. To enable hibernation, click the *Hibernate* tab, check *Enable hibernation*, and click *OK*. Some PCs, especially older ones, may not support Standby or Hibernate; if they don't, they won't have a Hibernate tab.



TIDY YOUR DESKTOP'S unused icons with Windows' Desktop Cleanup Wizard.

Cut **Desktop** & **Menu** Clutter

BEFORE YOU CAN get to work on any job, you need to organize your tools and materials. But sometimes Windows makes it hard to tell what tools you have. By removing icons duplicated in the Start menu, in the taskbar's Quick Launch toolbar, and on the desktop, you'll more easily find what you need. You may want to have some icons in multiple locations, but the simplest arrangement is to just choose the best launch location for each individual icon, and remove it from the others.

ICON SEE YOU FROM HERE

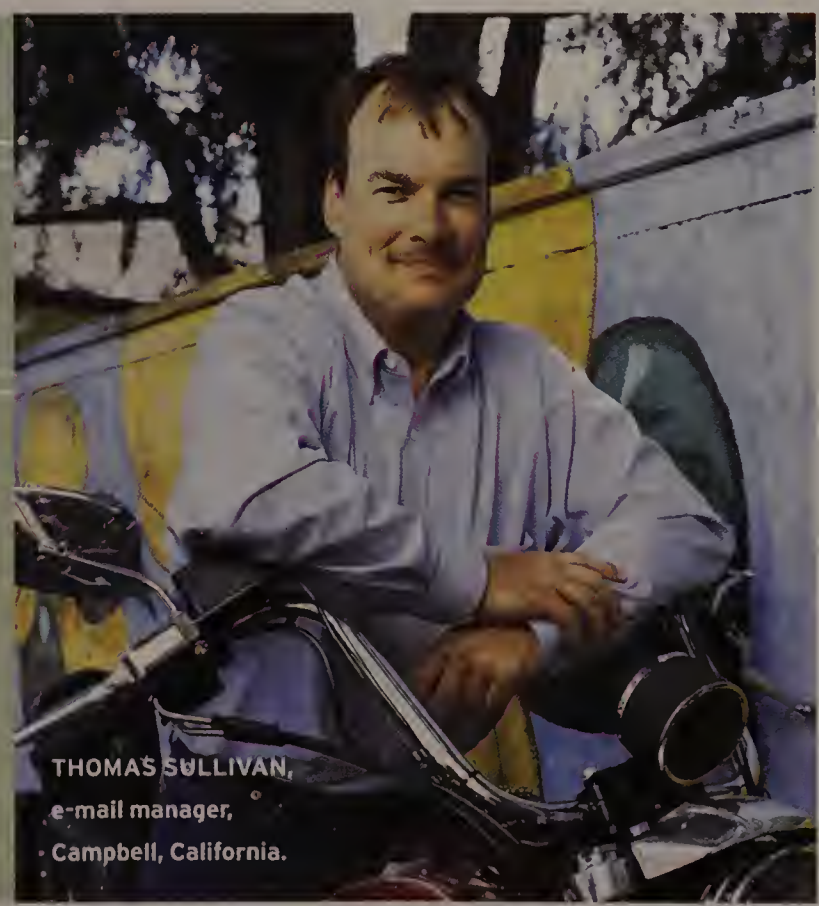
UNINSTALLING THE TRIAL and feature-limited software that came with your PC is a good start, but it won't remove ▶

MY FAVORITE FIX

Gamer Shuts Off Services

THE ANNOYANCE: I'm a gamer, so performance is very important to me. Unfortunately, when applications or services start running while I'm playing something, they can kick me out of the game and cause network lag.

THE FIX: I use a batch file to turn off a bunch of services all at once that would cause interruptions. I stop services like Automatic Updates because it could search for or start downloading an update while I'm in the game, and that would affect my network performance. I also turn off my antivirus utility because sometimes the antivirus update will start up while I'm in a game, and if it does, it kicks me out of the game. But I need some of these services, like Computer Browser, in order to connect to my office VPN, so I have another batch file I use to turn those services back on when it's time to get back to work. (For a sample batch file that turns off unnecessary services, head to find.pcworld.com/43940.)



THOMAS SULLIVAN, e-mail manager, Campbell, California.

PHOTOGRAPH: ROBERT HOLMGREN

49% Portion of Microsoft security advisories rated "Critical" in 2003

—MICROSOFT

every pointless shortcut. Thankfully, Windows XP introduced a handy tool for cleaning up unused desktop icons. Right-click the desktop, choose *Properties*, click the *Desktop* tab, and click the *Customize Desktop* button. Click *Clean Desktop Now* to launch a wizard that finds the icons you haven't used recently and moves them to an Unused Desktop Shortcuts folder. If you have just a few items left on the desktop (such as the Recycle Bin), link them to your taskbar so you won't have to minimize your running applications just to get to them: Right-click the taskbar and choose *Toolbars•Desktop*. Then right-click the new toolbar's name. (If 'Lock the Taskbar' is checked, select it to uncheck it, and right-click the taskbar again to add the Desktop toolbar to the taskbar.) At the top of the right-click menu, you'll find options that change the size of the icons and turn on or off the display of the toolbar's title or its icons' names.

The Windows Start menu is highly configurable—right-click the *Start* button, click *Properties*, choose the *Start Menu* tab, pick either *Start menu* (which is XP's default) or *Classic Start* (which changes the menu to something resembling that in Windows 2000), and then click the corresponding *Customize* button to see the wealth of options. Most are a matter of personal taste, but you can get rid of two duplicated icons in the nonclassic Start menu by unchecking the *Internet* and *E-mail* options (links to those programs appear in your Quick Launch toolbar by default). Click the *Advanced* tab to see more streamlining options. If you seldom click the Start menu's Favorites, Search, Set Program Access and Defaults, Help and Support, or other links, you can make them go away by unchecking them in the 'Start menu items' list and clicking *OK*.

The Quick Launch toolbar, located to the right of the Start button, is the handiest way to launch oft-used applications—you can fire up your favorite programs with one click. (If your Quick Launch toolbar isn't visible, right-click the taskbar and select *Toolbars•Quick Launch*.)

Remove any seldom-used icons (right-click them and choose *Delete*). You can also resize the Quick Launch toolbar (drag the bar that appears on the toolbar's right when the taskbar is not locked), arrange the icons (drag each one), and hide the toolbar's title and icon names. Most programs, when you install them with default settings, plop their icons on the Desktop, in the Quick Launch area, *and* in the Start menu—it's overkill. To prevent future icon clutter, always choose the 'custom' option when you install a new application so that you can decide whether it should create Quick Launch or Desktop icons.

BYE-BYE, ICONS

15 ICONS YOU CAN DUMP

YOU CAN SHUT DOWN these system tray applets, or delete or hide them, without fear of disabling a critical Windows function.

ICON	Name	How to banish it
9:33 AM	Clock	Right-click the taskbar, choose ***Properties***, and uncheck ***Show the clock***.
	Microsoft Outlook	Right-click the icon, and choose ***Customize Notifications***. Select the icon in the current items list, and then choose ***Always hide*** from the behavior list.
	Mozilla/Netscape Quick Launch	Right-click the icon, select ***Disable Quick Launch***, and then click ***OK***.
	Musicmatch Jukebox	Right-click the icon and choose ***Disable QuickPlay***.
	Network Status	Click the icon once, click the Properties button, and uncheck ***Show icon in notification area when connected***.
	OpenOffice.org	Right-click the icon and deselect ***Load OpenOffice.org During System Start-up***.
	Power	Launch Control Panel's Power Options, click on Advanced, and uncheck ***Always show icon on the taskbar***.
	QuickTime	Right-click and choose QuickTime Preferences; choose ***Browser Plug-in*** from the drop-down list and uncheck ***QuickTime system tray icon***.
	Roxio Audio Central	Right-click, choose ***Options***, and uncheck ***Enable AudioCentral icon in system tray***.
	Roxio Drag-to-Disc	Right-click, choose ***Settings***, and uncheck ***Show an icon in the system tray***.
	Unplug or Eject Hardware	Right-click the icon, choose ***Unplug or eject hardware***, and uncheck ***Show Unplug/Eject Icon On The Taskbar***.
	Volume control	Right-click, choose ***Adjust Audio Properties***, and uncheck ***Place volume icon in the taskbar***.
	WildTangent Driver	Click the icon, select ***Recent Messages•Welcome to GameChannel***, click the Options tab, and uncheck ***Keep icon in system tray***.
	Winamp Agent	Right-click and choose ***Disable Winamp Agent***.
	Windows Messenger	Right-click the icon, select ***Open***, click ***Tools•Options***, select the ***Preferences*** tab, and uncheck ***Run this program when Windows starts***.

SYSTEM TRAY SURGERY

UNINSTALLING superfluous applications will reduce the number of system tray icons competing for your attention, but you can probably streamline things even more. Windows, hardware devices, and system utilities install icons to offer instant access to settings or to display the status of one thing or another. Simplifying the system tray frees space on the taskbar for more important stuff (see "15 Icons You Can Dump," at left, for some examples of the most common possibilities). ▶

5% Portion of instant messages received that are spam

—IMLogic

CDW®

Do your old PCs work better as paperweights or processors?

The world today moves faster than ever and if your PCs can't keep up, neither can your employees. Our newest PCs are more cost-effective to maintain and run all the latest applications, resulting in a more efficient, more secure workplace. Our notebooks make your mobile workforce more agile and productive than ever before. And at CDW, all of our PCs come with a team of experts to help you select and configure the right systems to help your experts stay ahead. Call today, and get your workflow flowing.

THE RIGHT TECHNOLOGY. RIGHT AWAY. CDW.com/PCEVENT • 800.399.4CDW

In Canada, call 800 387.2173 • CDW.ca

© 2004 CDW Corporation

CDW®

Our new, more powerful PCs take a load off your mind. And their desks.

hp compaq business notebook nc6000

- Intel® Centrino™ Mobile Technology
- 1.5GHz Intel® Pentium® M processor
- Intel® PRO/Wireless 2100 network connection (802.11b)
- Memory: 256MB
- 16X10X24 CD-RW/8X DVD-ROM
- 14.1" XGA active-matrix display

Recommended accessories and services:
hp port replicator $199 (CDW 546258)
hp 256MB memory $99 (CDW 548016)
hp 3-year 9X5XNBD Onsite Service $159 (CDW 214786)

$1549 NOTEBOOK CDW 638792
-200 TRADE-IN[1]
+79 SPRINT WIRELESS CARD[2] CDW 415471

$1428 YOUR PRICE

Eligible processors include Intel Pentium II, III or Intel Celeron; AMD processors do not qualify; trade-in values are estimates only; actual trade-in values may vary from $25 to $500; all products must be in good working condition and have a fair market value; call your CDW account manager for details; offer ends 12/31/2004. [2]Regularly $179; Receive $100 mail-in CDW Rebate when you purchase a Sprint Novatel Wireless Card; Service activation required through CDW, Sprint wireless card must be purchased with any notebook to receive the rebate; offer ends 12/31/2004. Customer understands that CDW is not the manufacturer of the products purchased by customer hereunder and the only warranties offered are those of the manufacturer, not CDW. All pricing is subject to change. CDW reserves the right to make adjustments to pricing, products and service offerings for reasons including, but not limited to, changing market

Acer AcerPower F2 Desktop

- 3.0GHz Intel® Celeron® processor
- Memory: 256MB
- 40GB hard drive
- Windows® XP Professional

Special price on options:
Acer 15" LCD monitor **$359** (CDW 657081)
Acer 128MB memory upgrade **$58** (CDW 368639)

$449 DESKTOP CDW 659772
-30 TRADE-IN[1]
$419 YOUR PRICE

acer®

Toshiba Tecra M2V-S330

- Intel® Centrino™ Mobile Technology
- 1.5GHz Intel® Pentium® M processor
- Intel® PRO/Wireless 2200 network connection (802.11b/g)
- Memory: 256MB
- 24X10X24 CD-RW/8X DVD-ROM
- 15" XGA active-matrix display

Recommended accessories and services:
Toshiba port replicator **$179** (CDW 577638)
Toshiba USB floppy kit **$49** (CDW 328969)
Toshiba 3-year service **$165** (CDW 289171)

$1499 NOTEBOOK CDW 624662
-200 TRADE-IN[1]
+79 SPRINT WIRELESS CARD[2] CDW 415471
$1378 YOUR PRICE

TOSHIBA

hp compaq business desktop d220

- 2.4GHz Intel® Celeron® processor
- Memory: 128MB
- 40GB hard drive
- Windows® XP Home

Special price on options:
hp 15" LCD monitor **$349** (CDW 633920)
hp 256MB memory upgrade **$90** (CDW 573469)
hp warranty upgrade **$93** (CDW 226432)

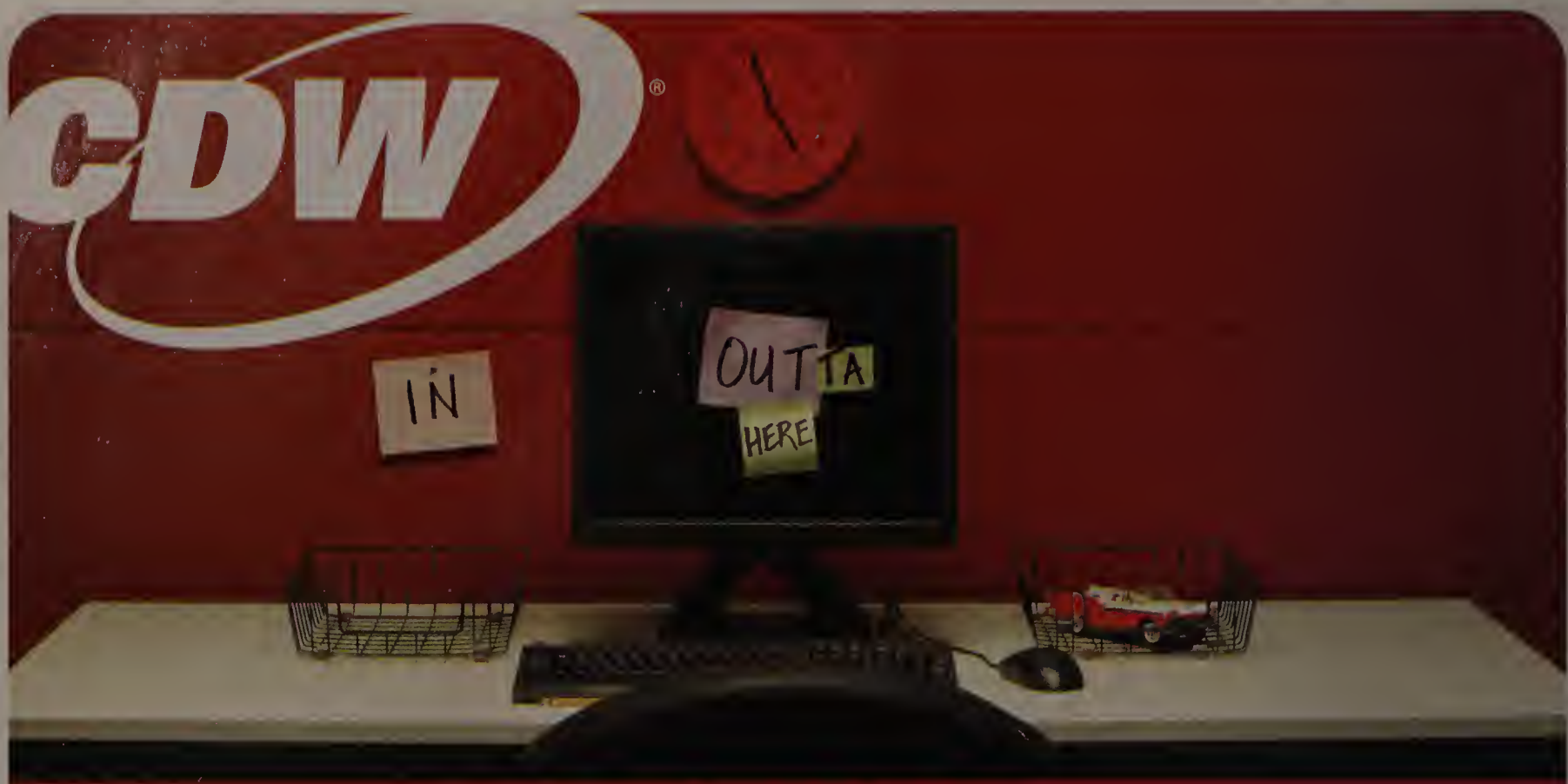
$379 DESKTOP CDW 594531
-30 TRADE-IN[2]
$349 YOUR PRICE

Monitor sold separately

THE RIGHT TECHNOLOGY. RIGHT AWAY.™ CDW.com/PCEVENT • 800.399.4CDW

In Canada, call 800.387.2173 • CDW.ca

conditions, product discontinuation, product unavailability, manufacturer price changes and errors in advertisements. All orders are subject to product availability. Therefore, CDW cannot guarantee that it will be able to fulfill customer's orders. The terms and conditions of sale are limited to those contained herein and on CDW's Web Site at CDW.com. Notice of objection to and rejection of any additional or different terms in any form delivered by customer is hereby given.
© 2004 CDW Corporation



Our people help you find the right PCs. So your people have more uptime and less downtime.

IBM ThinkPad R40

- Intel® Centrino™ Mobile Technology
- 1.4GHz Intel® Pentium® M processor
- Intel® PRO/Wireless 2200 network connection (802.11b/g)
- Memory: 256MB
- 24X10X24 CD-RW/8X DVD-ROM
- 14.1" XGA active-matrix display

$1299 NOTEBOOK CDW 561046
-200 TRADE-IN[1]
+79 SPRINT WIRELESS CARD[2] CDW 415471

$1178 YOUR PRICE

Recommended accessories and services:
IBM 256MB memory $93 (CDW 372399)
IBM port replicator $189 (CDW 461019)
IBM 3-year depot service $160 (CDW 169500)

Monitor sold separately

IBM ThinkCentre A30 Desktop

- 2.4GHz Intel® Celeron™ processor
- Memory: 128MB
- 40GB hard drive
- Windows® XP Professional

$449 DESKTOP CDW 594403
-30 TRADE-IN[1]

$419 YOUR PRICE

Special price on options:
IBM 15" LCD monitor $439 (CDW 515984)
IBM 256MB memory upgrade $93 (CDW 502188)
IBM warranty upgrade $139 (CDW 322617)

THE RIGHT TECHNOLOGY. RIGHT AWAY.™ CDW.com/PCEVENT • 800.399.4CDW

In Canada, call 800.387.2173 • CDW.ca

[1]Eligible processors include Intel Pentium II, III or Intel Celeron; AMD processors do not qualify; trade-in values are estimates only; actual trade-in values may vary from $25 to $500; all products must be in good working condition and have a fair market value; call your CDW account manager for details; offer ends 12/31/2004. [2]Regularly $179; Receive $100 mail-in CDW Rebate when you purchase a Sprint Novatel Wireless Card; Service activation required through CDW; Sprint wireless card must be purchased with any notebook to receive the rebate; offer ends 12/31/2004. Customer understands that CDW is not the manufacturer of the products purchased by customer hereunder and the only warranties offered are those of the manufacturer, not CDW. All pricing is subject to change. CDW reserves the right to make adjustments to pricing, products and service offerings for reasons including, but not limited to, changing market conditions, product discontinuation, product unavailability, manufacturer price changes and errors in advertisements. All orders are subject to product availability. Therefore, CDW cannot guarantee that it will be able to fulfill customer's orders. The terms and conditions of sale are limited to those contained herein and on CDW's Web Site at CDW.com. Notice of objection to and rejection of any additional or different terms in any form delivered by customer is hereby given. © 2004 CDW Corporation DTNB PG 10/04

Tackling the system tray is easier when all of its icons are visible: In Windows XP, right-click the *Start* button, choose *Properties*, click the *Taskbar* tab, uncheck *Hide inactive icons*, and click *OK* (you may want to reenable this when you're done). Left- or right-clicking each icon may reveal configuration options (every icon behaves differently). Even if the software doesn't let you disable its system tray icon, Windows can hide it using a slick system tray customization feature (see the Outlook item in "15 Icons You Can Dump").

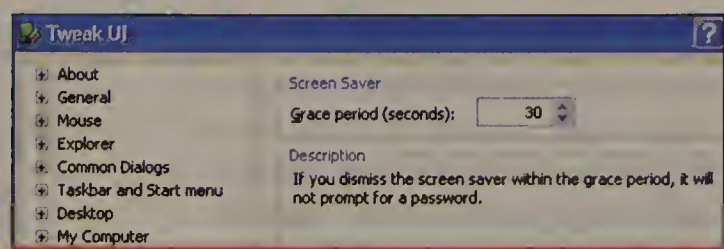
Whack **Application** Weeds

LIKE WINDOWS ITSELF, the applications you use daily get cluttered over time. You need liberation from your overstuffed inbox, from too-smart menus that hide the commands you want, and from layers of toolbars you never use. Here's how to clip or remove what you don't want.

GET SECURITY SIMPLY

PC SECURITY IS CRUCIAL these days. Enabling every security feature on your PC, however, can handcuff your productivity. For example, enabling password protection on Windows XP's screen saver lets you walk away from your PC without worry that someone might view sensitive information. But during a phone call, say, you might have to enter your screen-saver password if your attention wanders from the computer. There's a grace period between when the screen saver kicks in and when it starts demanding a password; the default is 5 to 10 seconds.

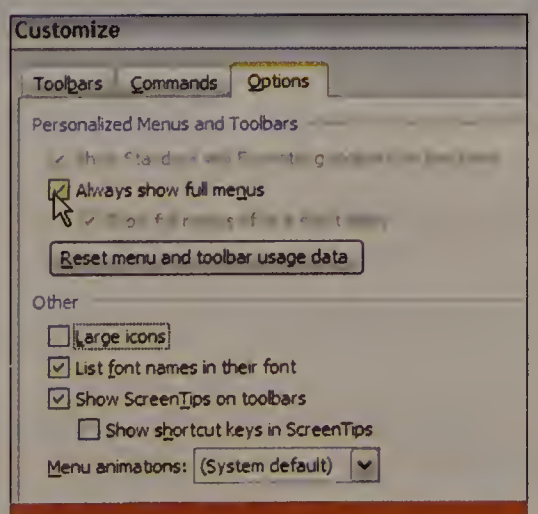
If you find that you often miss the cutoff and have to enter your screen-saver password repeatedly, you can change this grace period to something more reasonable. Microsoft's free Tweak UI PowerToys for Windows XP (find.pcworld.com/42714) can do the trick. Start Tweak UI, then click the plus sign next to Logon in the left pane, and click the Screen Saver category that appears beneath it. You'll be able to change the grace period to as long as 99999 seconds, but something in the range of 30 to 60 seconds is all you need.



GIVE YOURSELF TIME to react to your screen saver kicking in by upping the "grace period" in Tweak UI.

Windows XP Service Pack 2 adds several cool security features you might not have seen before, most notably the Windows Firewall. When you install SP2, a small icon that looks like a shield appears in the system tray. It links to the Security Center Control Panel, which lets you manage settings that turn Automatic Updates and the Windows Firewall on and off. But if you use your own software firewall (which we recommend; see last month's "Windows XP's Big Fix" at find.pcworld.com/43836 for more on this point and about SP2), Microsoft recommends that you turn off its built-in one. If you do that, you'll get lots of confusing little balloon alerts from the system tray telling you to turn on the firewall. To end those alerts, double-click the icon to open the Security Center, click the link on the left that reads *Change the way Security Center alerts me*, and then uncheck the *Firewall Alert* check box.

This same tip can also save you from the weekly nag alert that Automatic Updates sends out. If you update Windows manually, and if you have disabled Automatic Updates, uncheck the *Automatic Updates* check box, as well.



SEE EVERYTHING clearly by eliminating personalized menus in Microsoft Office.

PARE APPLICATION MENUS

DOCUMENTS and e-mail constitute only half the complicated-application problem. Microsoft Office and many other programs employ menus that hide infrequently used commands. Designed to help users simplify their experience of using the application, the feature ironically makes it more difficult to find menu commands you use less frequently. If this bothers you, you can just disable these so-called personalized menus in Outlook, Word, Excel, or Access by choosing *Tools•Customize*, checking *Always show full menus*, and clicking *Close*.

Sometimes you might not want to see the entire menu. Some applications, such as Internet Explorer and Outlook, let you drag and drop (or resize) toolbars to minimize the space they take up. Other programs, such as the Mozilla browser, ▶

48 Number of emoticons in Yahoo Instant Messenger (all are animated)

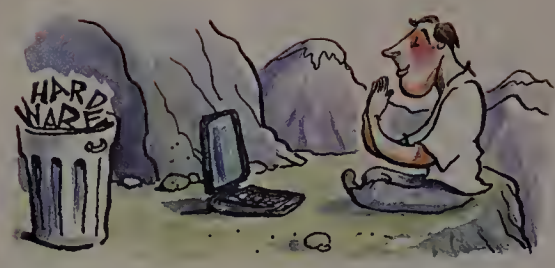
–PC WORLD RESEARCH

allow you to collapse seldom-used elements. After you move or resize your Internet Explorer toolbars, lock them in place by right-clicking a toolbar or menu bar and selecting *Lock the Toolbars.*

SLIM THE 800-POUND INBOX

WHEN YOUR INBOX contains hundreds—or thousands—of messages, you're less likely to act on those that need attention, and finding a particular e-mail takes forever. But you can take remedial action.

First, use good spam-filtering tools to cull the most egregious junk and virus-laden bombs. *PC World's* editors gave a World Class award to Cloudmark SpamNet (see find.pcworld.com/43696 for more information). You might need to keep some messages for future reference, but they don't need to languish in your inbox. Move them to subfolders. Delete ruthlessly. And use your e-mail application's archive feature to transfer messages that are older than a certain date (say, six months ago) to an archive file.



Achieve **Hardware** Nirvana

IN THEORY, any hardware installed and operating on your PC requires power, memory, and processor attention. Getting rid of the devices you don't use can speed things up. Some hardware devices, such as wireless network adapters, may also significantly shorten laptop battery life, even if you're not connected to a network, while exposing your notebook to security threats.

If you seldom use your modem, infrared connection, serial port, or parallel port, you can use hardware profiles to disable some or all of these as a group, saving battery power. The implications of this aren't minor: If you need to use your serial port in the future, you'll have to reboot with the hardware profile for that port enabled. But if the need is truly rare, disabling the function is worth the effort. To create a new hardware profile, right-click *My Computer* (on the desktop or in the Start menu), choose *Properties,* click the *Hardware* tab, and then click the *Hardware Profiles* button. Select an existing profile (you'll probably have just one), and click *Copy,* then *OK.* (Copying the existing profile is the easiest way to create a new one.) To make a particular profile the default, use the arrows at the right of the dialog box to move it to the top of the list. Windows will use it the next time it boots. To disable hardware within the current profile, right-click *My Computer,* choose *Properties,* click the *Hardware* tab, and then click the *Device Manager* button. Right-click the hardware item you want to disable in Device Manager's list (you may need to expand the list first), and choose

CUT THE FAT

STRIPPED-DOWN SOFTWARE ALTERNATIVES

IF YOU DON'T NEED COMPLEX SOFTWARE suites with dozens of features you never plan to use, why buy them in the first place? Many free applications do the job without complications like product activation or digital rights management schemes. Here are a few.

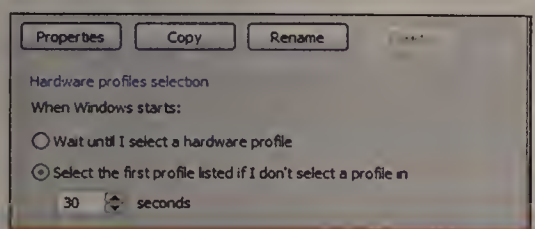
INSTEAD OF ...	you could use...	and save yourself...	Comments
Microsoft Office	OpenOffice	$300, 200MB of storage, and 128MB of RAM	OpenOffice (find.pcworld.com/42772), a completely free alternative, lacks the security problems, "assistants," and background apps Microsoft Office brings along.
Windows Media Player	Quintessential Player	from having to deal with the constraints of digital rights management	The Quintessential Player (find.pcworld.com/42800) can play any video or audio file format.
Internet Explorer	Mozilla, Opera, or any other browser	from the danger of ActiveX and security flaws that let spyware and worms get on your PC	Internet Explorer might get patches to fix its many bugs, but repairing our trust in the browser will take longer. (Visit find.pcworld.com/43914 for PCWorld.com's Downloads.)
McAfee VirusScan	AVG Anti-Virus	$50 to $70 to purchase the software, and $20 to $30 a year for renewals	AVG (find.pcworld.com/42742) is an award-winning, simple, powerful, and utterly free antivirus program.
Norton Internet Security	ZoneAlarm 5	$70	With free firewalls like this (find.pcworld.com/43032), who needs to buy one?

28 Average number of spyware applications on an infected computer

—EARTHLINK AND WEBROOT SOFTWARE

Disable. (A word of advice: Don't disable any hardware listed under the System Devices category.)

You can also save some of your laptop's battery life (and simplify matters) by ejecting any of the myriad accessories you may have plugged into the laptop, such as PC Cards and flash memory cards; disconnect any USB and FireWire devices, as well. To avoid network complications and strengthen security, use just one network at a time—disable your wireless network connection if you're connected by wire (or if you don't want to use the Wi-Fi card). Most newer laptops with built-in Wi-Fi have a little on/off switch or button on the outside of the laptop's case. Use it.



HARDWARE PROFILES let you disable hardware you don't need at boot time.

Here's another important pull-the-plug suggestion: Not every PC needs to be connected to the Internet. If you have a second or third computer, dedicated to children's games or to other duties that don't require a connection, disconnect it from the Internet, literally—just pull out the phone or network cable, or disable the supporting hardware in the Device Manager as described above. If the PC isn't online, it can't catch most viruses.

Running out of free disk space affects performance and obviously prevents you from installing additional programs or creating new documents. You can usually free a significant amount of space by deleting junk files left behind by applications and Web browsers. To jettison the junk, open *My Computer*, right-click the drive that Windows is installed on, choose *Properties*, and then click *Disk Cleanup*. After scanning the drive, Windows will present a list of items, sometimes totaling hundreds of megabytes. Check the items in the list you want to delete, and then click *OK*.

FRAG YOUR DEFRAGGER

AND HERE'S ONE LAST TIP: Don't waste time defragging your hard drive. In the past, by rearranging the sectors of each file on your disk into contiguous and optimized locations, you could boost disk performance. Defragmenting will increase the amount of contiguous free space (which might help you install large programs, like games), but defragging provides minimal performance benefits on most typical PCs (see February's "Backing Up to Happiness," find.pcworld.com/43838). Instead, save precious time and try something other than a defrag if you need a speed boost. ■

Internet Tips *columnist Scott Spanbauer is a contributing editor for* PC World.

TOO MUCH OF A GOOD THING

The Pitfalls of Simplification

WHILE IT'S GOOD TO ELIMINATE unneeded services, applications, and other PC clutter, going too far can turn a PC that's merely annoying into a nonfunctioning one. If you run Windows XP, the System Restore tool can and will save your behind (and your system) if you ever cross the line that divides PC simplification from a PC lobotomy.

In general, if you're not sure whether uninstalling or disabling a program or service is a good idea, leave it be. Google is a great way to find out what a particular program is—just search for the file name. Be certain you know what a program or service does before you disable it, lest you turn off something Windows needs to boot.

To prepare for that possibility, make a bootable Windows XP emergency recovery CD before you start simplifying. (See find.pcworld.com/43698 for instructions.) Once you make the CD, test it, then put it somewhere safe and pray you'll never have to use it.

You're better off disabling those things you know are unnecessary, and then monitoring the PC for a day, just to make sure you haven't broken something. Always proceed with your simplification carefully, disabling one service or program at a time, and then rebooting to see if its absence causes a problem on startup.

Name	Description	Status	Startup Type
IPSEC Services	Manages I...	Started	Automatic
Logical Disk Manager	Detects an...		Manual
Logical Disk Manage...	Configures...		Manual
Messenger	Transmits ...	Started	Manual
MS Software Shado...	Manages s...		Manual

TURNING OFF SERVICES is an easy simplification. But if you go too far, Windows might not be able to restart the next time.

If all is well, create a new restore point using Windows XP's System Restore tool, which takes snapshots of your system configuration and can restore a botched simplification effort with a few mouse clicks. Creating a restore point with this tool is easy: Choose *Start•All Programs* (or *Programs*)*•Accessories•System Tools•System Restore*, select *Create a restore point*, click *Next*, enter a description of the restore point (such as 'right before starting simplification'), and then click *Create*.

System Restore also lets you create a restore point before you install new software, allowing you to back out of any unwanted changes the new program makes to your system. Thanks to System Restore and the emergency recovery CD, you can feel relatively free to simplify without much risk of turning your PC into a paperweight.

92% Portion of IT managers who found spyware apps on company PCs

—WEBSENSE AND HARRIS INTERACTIVE

IOGEAR®

We've Got Your Back

IOGEAR's 1.8" Hi-Speed USB 2.0 ION Drive is small enough to fit in your hip pocket, big enough to hold a flash-dwarfing 40GB of data. Store as many reports, notes, assignments, presentations, MP3s, videos, and other high-volume media files as you like. With unparalleled impact-resistance construction, it's designed for hallway bumps, airport bangs and boardroom bruises. And it's both compatible with both PCs and Macs.

To keep pace with your fast-lane lifestyle, the ION Drive boasts USB 2.0 and USB 1.1 compatibility, burning data at a hyper-fast 480Mb/sec.

And be sure to check out IOGEAR's 2.5" portable and 3.5" desktop drives. Whatever your storage needs, IOGEAR's got your back.

3.5IN
Capacity up to 250 GB
USB 2.0 / FireWire / FireWire 800

1.8IN
Capacity up to 40 GB
USB 2.0

2.5IN
Capacity up to 120 GB
USB 2.0 / FireWire

ION
Portable Storage

CALL **866 946 4327** toll free

iogear.com/pcwstorage

New Thinking, New Style

©2004 IOGEAR, Inc. All rights reserved. Reproduction in whole or part without permission is prohibited. All other trademarks are the property of their respective

All Gain, No Pain

PC chores don't have to be drudgery. We show you quick and easy ways to complete six essential tasks.

THE COMMON WISDOM is that PCs, like your finances, require a lot of time-hogging good habits. That lengthy list of "shoulds" might make you weary enough to want to lie down. In sympathy, we've simplified six PC tasks, skipping all the complications and taking all the short-cuts. We also chose the recommended products for their no-hassle quotient.

There are many ways to approach any task, and these guides aren't definitive—just the best way to get the job done. ▶

EDITED BY REBECCA FREED

ILLUSTRATIONS BY HAL MAYFORTH

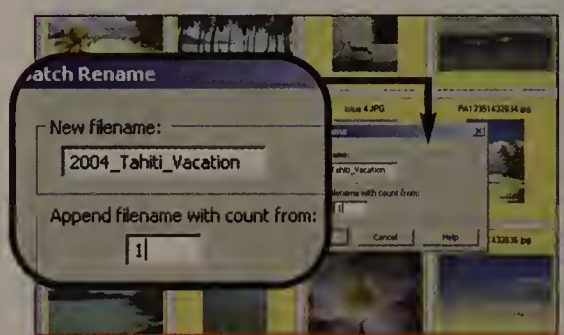
Organize and Fix Up Your Photos in a Flash

Time to complete 5 minutes to install, 10 minutes to organize

Required product Jasc Paint Shop Photo Album 5, $49, www.jascsoftware.com

THERE'S A BETTER WAY to store your digital photos than dumping them onto your hard drive. With a little effort and the right program, your pictures can be cleaned up, oriented right side up, and meaningfully named.

1 Connect your camera to your PC and launch Photo Album 5. In the pop-up window, choose *Organize*.



GIVE YOUR photos recognizable names.

2 On the toolbar menu, click *Camera•Get All Images*. Rename the folder to something descriptive, such as **2004 Tahiti Vacation**.

3 If some of the images aren't oriented correctly, you can rotate them all simultaneously. Hold down the <Ctrl> key and select the photos that you want to rotate. Then right-click a highlighted photo, select *Rotate*, and choose *Left* or *Right*.

4 Before you edit your photos, we recommend making copies of your images. Certain operations (such as the Quick Fix) cannot be undone, so it's good to keep a copy in case you don't like the results of your edit.

5 Want to perk up a few dull shots? With a single click, the Quick Fix tool adjusts a photo's brightness, contrast, and color balance. To modify several photos at once, select the images, click *Batch* on the toolbar, and choose *Quick Fix*.

6 If you want to e-mail photos or post them to the Web, reduce their size for quicker uploads. Select the images to resize, click *Batch* on the toolbar, and select *Resize*.

7 Loaded straight from your camera, your images have cryptic file names (like "IMG_0001"). If you rename them, they'll be easier to locate later. To rename them all at once, select the photos, click *Batch* on the toolbar, and choose *Rename*. A Batch Rename window pops up. In the 'New filename' field, type your desired title—for example, **2004_Tahiti_Vacation**. —*Grace Aquino*

Make Backups in the Background

Time to complete 10 minutes to install, 5 minutes to set up

Required products Iomega HDD 160GB USB 2.0 External Desktop Hard Drive with Iomega Automatic Backup software, $190, www.iomega.com; Windows 2000 or XP

YES, BACKING UP all your data is critical, but you probably never do it because getting started seems too hard. This method is dead simple to set up and ensures that you always have an up-to-date version of your data.

1 Set up your backup media. We recommend an external hard drive because all you have to do is plug it in, and Iomega's models come with the company's Automatic Backup software.

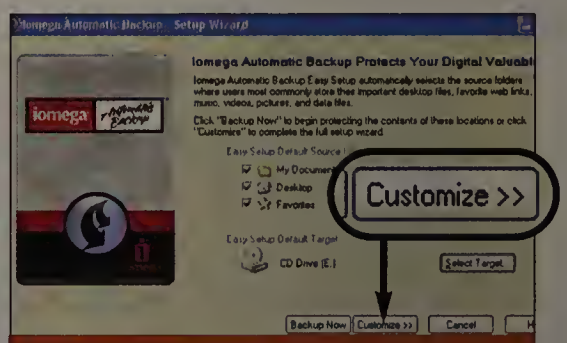
2 In Windows Explorer, select *Tools•Folder Options*. Click the *View* tab. Select *Show hidden files and folders*. Click *OK*.

3 Install Iomega Automatic Backup. After the installation completes, it will bring you to the program's Setup Wizard.

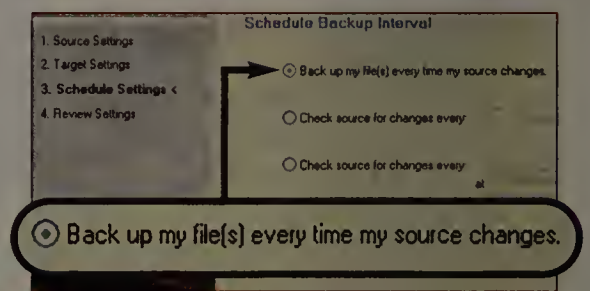
4 On the wizard's first page, look at the selections listed under Easy Setup Default Source Folders. If you keep files in the My Documents, Desktop, and Favorites folders, leave all the check boxes selected. Next, click the *Select Target* button. Select the hard drive you just installed, then click *OK* and *Customize*.

5 On the next page, locate the rest of your data by completing the following steps for each of the folders listed below: Click the *Add Folder* button, select a folder, and click *OK*. Here are the folders:

- Shared Documents
- C:\Documents and Settings*your_name*\Application Data
- C:\Documents and Settings*your_name*\Local Settings\Application Data



LOCATE YOUR data by picking folders.



WE RECOMMEND constant backups.

6 Using the same procedure, select any other folders that you want backed up. When you've finished, click *Next*.

7 Complete the setup using the wizard. We recommend that you stick with the program's defaults, which will automatically back up your documents every time that a change occurs. —*Lincoln Spector*

Tidy Up Your Files and Folders

Time to complete 5 minutes to set up

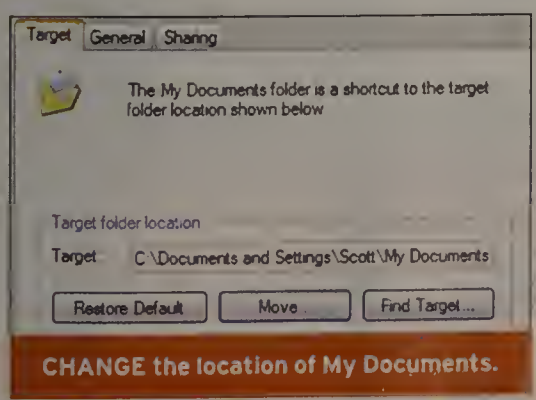
Required product Microsoft Windows XP, $200, www.microsoft.com

IT'S EASY TO JUST let Windows save every file where it wants to—in My Documents—but you can end up with a cluttered, unwieldy folder, and My Documents can be time-consuming to navigate to. You may instead want to store your files on another, larger hard drive, copy them to another location, or compress them in a jiffy. A couple of tricks will let you quickly and easily set up your filing system your way and keep it organized.

1 To change the location of My Documents, choose *Start*, right-click *My Documents*, and select *Properties*.

2 Click *Move*, and browse to the new location you want for My Documents. Click *Make New Folder* if necessary (the folder will still appear as My Documents in the Start menu and Explorer). Click *OK*.

3 Make the Send To menu your friend by putting the programs and folders you use most often into it: First, navigate to the Send To folder itself. Each user account has its own folder at *n:*\Documents and Settings*your_name*\SendTo, where *n:* is the drive Windows is installed on and *your_name* is the log-on name of the user. Use My Computer or Explorer to open this folder.



CHANGE the location of My Documents.

4 Create a shortcut to the folder you want to send documents to: Choose *File•New•Shartcut* (or right-click an open area of the Explorer window and choose *New•Shartcut*), and then browse to the program or folder you would like to add to the Send To menu. This works for applications as well: If you always open text documents in WordPad, for example, put a shortcut to WordPad in your Send To folder. Or make a shortcut to a network drive so that you can back up files and folders with two clicks.

5 Use the Send To command to compress large files (such as photos or audio or video clips) for storage or e-mailing. In Explorer or any File•Open dialog box (including when you choose Insert•File in Outlook), right-click the giant file (or group of files), and then choose *Send Ta•Campressed (zipped) Falder*. Note: If saving disk space is your main concern, you should delete the original file once the compression process has completed. *–Scott Spanbauer*

Save Paper by Combining Print Jobs

Time to complete 5 minutes to install, less than 5 minutes to set up

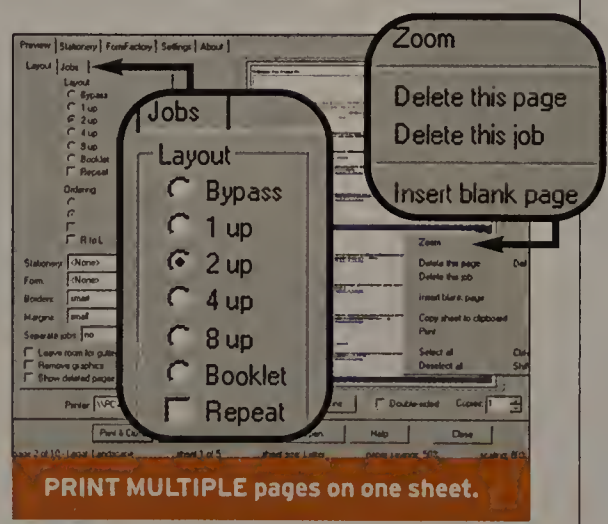
Required product FinePrint Software FinePrint 5, $50, www.fineprint.com

WANT TO DO something nice for the environment and your office-supplies budget? FinePrint lets you shrink multiple pages, make double-sided prints, and even combine print jobs. Here's how to merge two documents into one printout.

1 Install FinePrint, then set it as the default printer in the Settings•Printers menu so it will open whenever you print. To do so, right-click *FinePrint* and choose *Select as Default Printer.*

2 For your first document, choose *File•Print*. When the FinePrint dialog box appears, click the *Preview* tab. Click the *Layout* subtab to choose how many pages to print on one sheet and to preview your job.

3 Don't click the Print button or close the dialog box. Return to the application you were using and open the second document. Invoke the Print command again to add this document to FinePrint's preview window.



PRINT MULTIPLE pages on one sheet.

4 Right-click the preview window to inspect your print job or to remove or insert pages. Choose your printer from the drop-down menu, and click *Print & Close* or *Print* to finish. *–Rebecca Freed*

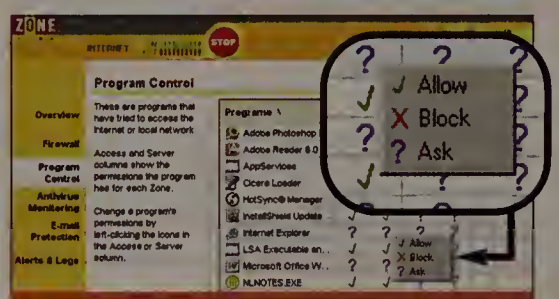
Install and Train a Firewall

Time to complete 10 minutes to download and install, 10 minutes to train

Required product Zone Labs ZoneAlarm 5, free, www.zonelabs.com

ZONEALARM IS ABOUT the easiest-to-use firewall we can think of, but you still have to do some fine-tuning to minimize confusing alerts. To save time, you can use ZoneAlarm's Control Center to manage programs' Internet access.

1 Download and launch the ZoneAlarm installer. Accept the default settings when ZoneAlarm asks you to configure Web surfing access. (If you think your computer is infected with a worm, virus, or browser hijacker, choose *No* to manually control which programs have Internet access until you've cleaned up the problem.) Click *Next* to continue, and reboot when prompted.



VIEW PROGRAMS' Internet access permissions in the Control Center.

2 Read through the brief ZoneAlarm tutorial that runs automatically and explains how to respond to ZoneAlarm alerts. ZoneAlarm will begin to display dialog boxes asking you to grant or block access to programs running on your PC that try to use the network or Internet connection.

3 When a dialog box pops up, look at the name of the program attempting to access the network. If you recognize it as legitimate, check the *Remember this setting* option, and then click *Allow*. If you're not sure about the program, click *More info* to view a description on the Zone Labs Web site. If you remain unsure whether the program is legitimate, click *Deny*.

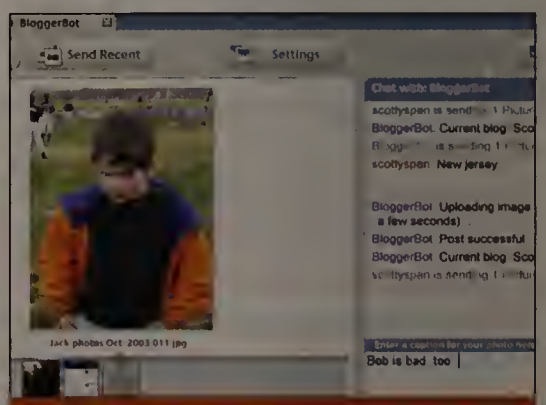
4 To review and change the permissions you've given programs, double-click the *ZoneAlarm* icon in your system tray to bring up ZoneAlarm's Control Center. In the menu bar on the left side of the screen, click *Program Control*. Next, click the *Programs* tab at the top right of the main window. In this view you can specify exactly what each program is allowed to do—on the Internet and on trusted networks such as your office or home network. Choosing 'Allow' for often-used programs will minimize the number of pop-up alerts you see. —*Scott Spanbauer*

Create a Web Site in Minutes

Time to complete 10 minutes for installation, 15 minutes to create and upload content

Required products Blogger, free, www.blogger.com; Picasa Hello, free, www.hello.com

EVERYONE DREAMS of having their own Web site, but learning HTML and tweaking code can be a big time sink. The words and pictures you want to share with the world are what really matter, and a Weblog (or blog) gives you a basic Web presence almost instantly. Even better, the services we've chosen to help you do it are free.



PICASA Hello automates photo blogging.

1 Browse to the Blogger Web site, click the *Create Your Blog Now* link, and follow the prompts to establish an account (be sure to jot down your user name and password), a blog title, and a blog address.

2 Select a blog template that suits your design sensibilities, and click the arrow at the bottom of the screen.

3 Click the *Start Posting* link, and then enter a title and message in the Posting sheet. When you're satisfied with your post, click the *Publish Post* link. To see how your published blog looks, click the *View Blog* tab.

4 The Posting, Settings, and Template tabs let you control just about every aspect of your blog, including deleting entries (or entire blogs) and allowing others to add posts and comments. If you want to edit or delete an existing post, click *Posting*, then *Edit Posts*. To choose a different design template for your blog, select the *Template* tab, and then click *Pick new*.

5 Download and install Picasa's free Hello instant messaging utility. Again, make a note of your Hello user name and password. Launch Hello, and then log in.

6 Click *Send Pictures*, and then browse to and select the photo that you want to post to your blog. When you're prompted, choose *BloggerBot* as the photo recipient, and click *Send*. Next, enter a photo caption and click *Publish*. That's it.

One note: The first time you send a photo using Hello, Blogger will also prompt you to log in with your Blogger user name and password. —*Scott Spanbauer* ■

BUILD YOUR ULTIMATE WEBSITE WITH THE WORLD'S #1 WEB HOST

SOFTWARE BUNDLE INCLUDED
A $600 VALUE

PREMIUM SOFTWARE INCLUDED!

Featuring new versions of NetObjects Fusion® and PhotoImpact®.

See inside for details.

REGISTER DOMAINS:
.COM, .NET, .ORG, .INFO, .NAME, .US

$5.99 PER YEAR

1&1 INSTANT MAIL	ALL-INCLUSIVE WEB HOSTING	TURNKEY eSHOPS	DEDICATED SERVERS
$0.99 PER MONTH	FROM $4.99 PER MONTH	FROM $9.99 PER MONTH	FROM $49 PER MONTH

1&1

1&1 – GET MORE F

"Enabling all of our customers to do more on the web is our #1 priority."

1&1 offers a one-stop shop for all your web hosting needs to help you maximize your full web potential – without barriers, without downtime and without reservation. When you join 1&1, you'll benefit from more reliability, more features, more performance and more service – but at affordable prices.

1&1 is dedicated to our customers' complete satisfaction. From total beginners to veteran industry professionals, all users are fully supported. And since we stand behind all of our products and services, we offer a 90-day Money Back Guarantee in case you're not 100% satisfied.

Sign up with 1&1 today and join the 3 million customers who understand what makes 1&1 the world's #1 web host.

Andreas Gauger
Chairman of
the Board

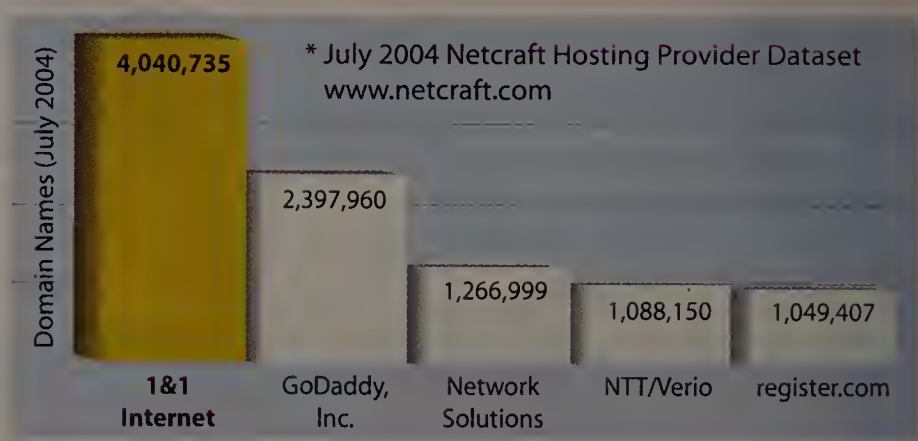
All-Inclusive Plans with No Hidden Charges

At 1&1, we don't believe you should have to pick and choose the features you require. So we provide you with everything you need in one comprehensive package, at one low price. And the price you see is always the price you'll pay! There are never any hidden charges with 1&1.

$600 Software Bundle with NEW VERSIONS of PhotoImpact® and NetObjects Fusion®!

NetObjects Fusion and PhotoImpact just got better! Gain more control with the user-friendly NetObjects Fusion 8 and build a website without HTML knowledge! Achieve professional results without the steep learning curve with PhotoImpact XL SE total image editor. Simply sign up for any shared hosting plan, eShop or server and we'll include NetObjects Fusion 8, PhotoImpact XL SE and much more (a $6.99 shipping & processing fee applies) to create, publish, promote and optimize your ideal website – a $600 value!

$600 SOFTWARE BUNDLE INCLUDED WITH ALL SHARED HOSTING, eSHOPS & SERVERS.
Featuring New Versions of PhotoImpact® and NetObjects Fusion®.



1&1 has registered more than 4 million domains. Here is how 1&1 stacks up against the competition.

1.877.GO1AND1

OR LESS!

Advanced Data Centers

25,000 high-end servers are stationed in continually monitored high-security zones.

18,000 MBit Connectivity

18,000 MBit connectivity lets more people visit and interact with your website, faster.

24/7 Support

All customers receive friendly, professional technical support by e-mail and phone.

Strong Partnerships

Microsoft CERTIFIED Partner

Working with such partners as Microsoft means 1&1 offers the very latest in technology.

Satisfaction Guaranteed

Try our products risk free for 90 days. If you're not 100% satisfied, you'll be refunded.

Reliability Guaranteed

We are confident in guaranteeing 99.9% uptime, because at 1&1, even our backups have backups.

1&1 INSTANT DOMAIN

Domain in an Instant!

Register Your Domain
It's fast, it's easy, and it's only the beginning of what you can accomplish online with 1&1. DNS management gives you full control over your domain. What's more, we assure you there are no hidden charges and no binding contracts.

Transfer Your Domain
Quickly and easily transfer unlimited domains to 1&1 at no additional cost. We only charge you the regular low cost to register a domain – just $5.99 a year. If you have a domain that you'd like to keep with another Registrar, simply point your domain to 1&1 name servers – also at no additional cost!

Included at no additional cost with all domains:

- DNS management
- DNS transfer
- Transfer existing domains at no additional cost
- 1 free e-mail address (alias)
- Unlimited e-mail forwarding
- Masked website forwarding
- Domain parking for future use
- Catch-all e-mail
- E-mail auto-responders
- Simple access via the 1&1 Control Panel

.COM
.NET
.ORG
.INFO
.NAME
.US

Afilias Co-founder & Accredited Registrar
ICANN Accredited Registrar
dot name

$5.99 PER YEAR

FOR MORE DETAILS GO TO **1AND1.COM**

1&1

1&1 MAIL

1&1 gives you two great ways to get mail.

Whether you need e-mail for personal use or business use, 1&1 has the perfect solution for you. 1&1 Instant Mail is ideal for home and individual users, allowing you to start sending and receiving personalized e-mails right away from 5 dedicated POP3 e-mail accounts. 1&1 Microsoft Exchange Hosting gives you or your entire business secure, reliable, affordable, up-to-date access to your most critical information – e-mail, contacts, calendars, public folders and more – anytime and from anywhere.

"Running a consulting company, I can be working from several locations each day. With 1&1's Microsoft Exchange service, I can easily access my Outlook data and important files from any computer. Whether I am on my desktop, notebook, PDA, or a client's computer, my work environment is synchronized with 1&1. For my small businesses maintaining my own Microsoft Exchange server had always been too costly or too difficult. With 1&1's service, it is now simple and affordable to work and share information virtually anywhere."

Michael Krupit

1.877.GO1AND1

90-DAY MONEY BACK GUARANTEE

100% SATISFACTION OR YOUR MONEY BACK

1&1 INSTANT MAIL

Mail in an Instant!

What does your ambiguous e-mail address say about you? Are you ready to take your personal e-mail to a more professional level? Then 1&1 has your solution. Simply register your domain with 1&1 and then add on 1&1 Instant Mail. In just minutes you'll have the power to send and receive e-mail from your own domain name.

- **5 POP3 e-mail accounts (50 MB each)**
- **10 e-mail aliases**
- **Includes 1&1 WebMail – access mail anytime, from any browser**
- **Send and receive e-mail from your domain**
- **Easy set up via your Control Panel**

$0.99 PER MONTH

1&1 EXCHANGE HOSTING

Exchange made easy!

Your Microsoft Exchange Hosting Plan from 1&1 lets you enjoy the communication and collaboration features and benefits of Microsoft Exchange without the hassles of maintaining your own Microsoft Exchange server. Read, send and receive e-mail and access your public folders, contacts and calendars at anytime, from anywhere via Microsoft Outlook® or any web browser.

- **1 Exchange account for 1 user**
- **500 MB e-mail storage space**
- **Group functionality tools**
- **Outlook® Web Access**
- **Virus Scanner**
- **Synchronize your data with ActiveSync**

OUTLOOK® 2003 INCLUDED*
With all Exchange accounts

*$6.99 shipping & handling applies.

$6.99 PER MONTH

Includes 24/7 support • No setup fee

1&1

FOR MORE DETAILS GO TO **1AND1.COM**

1&1 HOSTING

Create Your Website

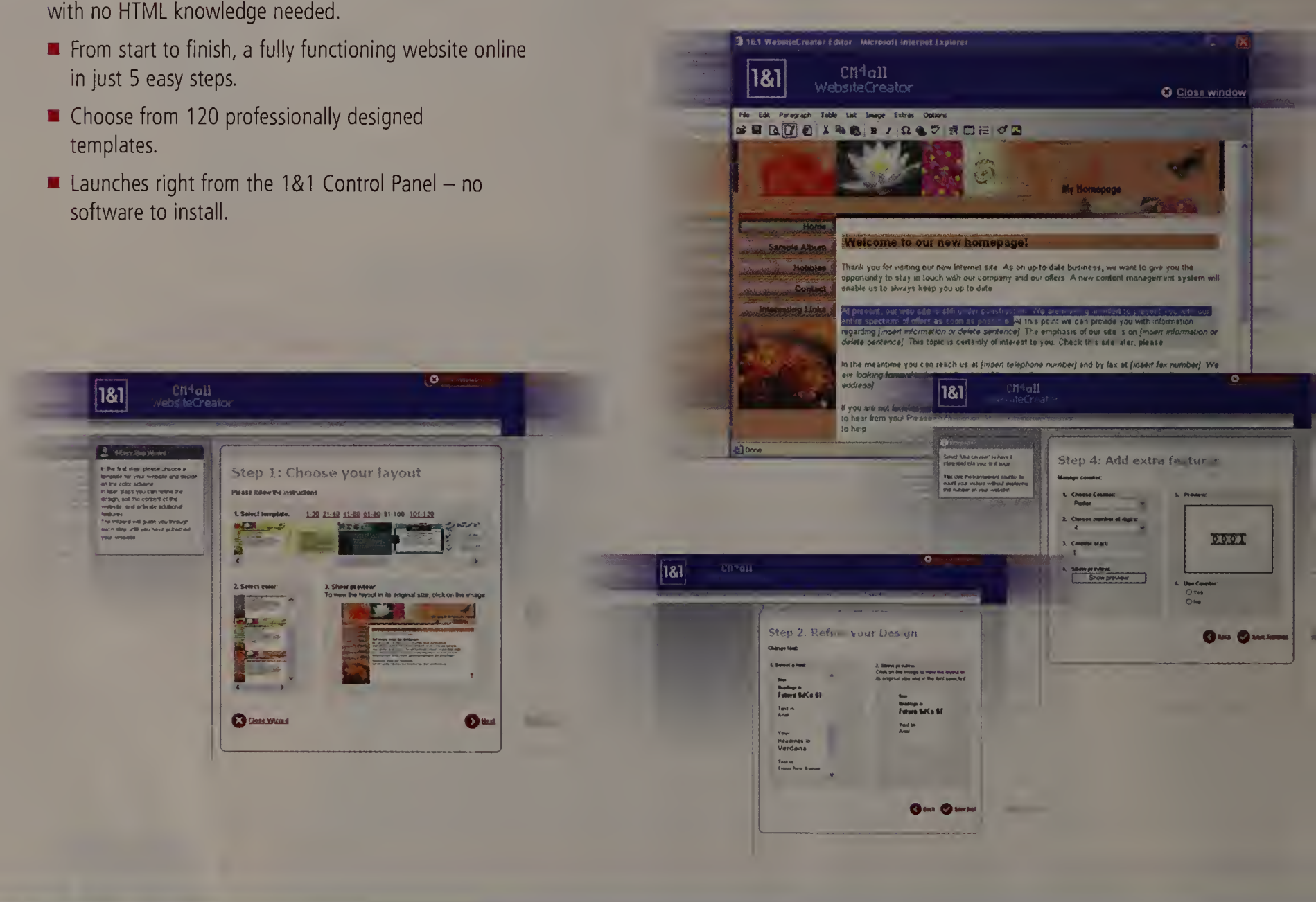
1&1 gives you everything you need to easily build your ultimate website.

Build your ideal web presence – with the latest software and online tools from 1&1. When you sign up for 1&1 shared hosting, we give you two ways to create your site – our valuable software bundle or the easy-to-use WebsiteCreator. Whether you're a novice user or a veteran online professional, the 1&1 software package and WebsiteCreator give you the power to create a high-impact, professional website. No matter which you use, WebsiteCreator or the software bundle, we give you exactly what you need to easily, effectively and economically make your presence online.

WebsiteCreator

Quickly and easily create and publish a high-quality website with no HTML knowledge needed.

- From start to finish, a fully functioning website online in just 5 easy steps.
- Choose from 120 professionally designed templates.
- Launches right from the 1&1 Control Panel – no software to install.



1.877.GO1AND1

$600 SOFTWARE BUNDLE INCLUDED WITH ALL SHARED HOSTING.

Featuring New Versions of PhotoImpact® and NetObjects Fusion®.

1&1 Software Bundle – a $600 value*

Sign up for any 1&1 shared hosting plan and we'll include NetObjects Fusion® 8, PhotoImpact® XL SE and much more so you can create, publish, promote and optimize your ideal website. And these are not limited-time trials – you'll be shipped a software CD plus manuals for:

NetObjects Fusion 8

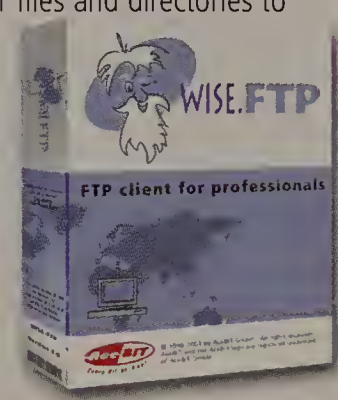
Use time-saving wizards and a simple, user-friendly interface to build a website without HTML programming.

Hello Engines! Professional 4.1

Reliably submit your website to all the important search engines and directories.

WISE.FTP

Easily publish your website by transferring your files and directories to the 1&1 server.



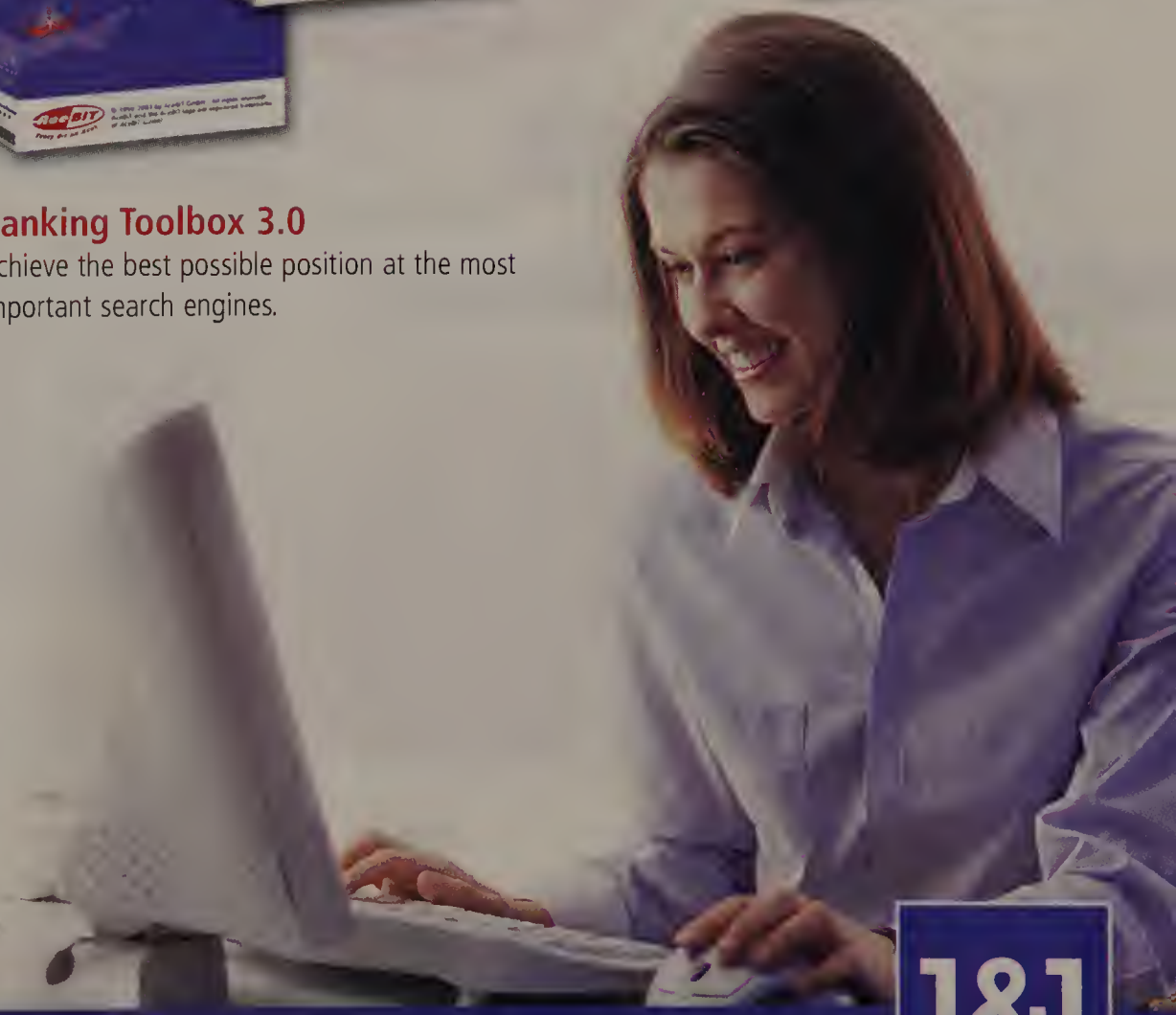
Ranking Toolbox 3.0

Achieve the best possible position at the most important search engines.

PhotoImpact XL SE

Create and edit graphics and photos like a pro, but without the steep learning curve.

*$6.99 shipping & processing fee applies



1&1

FOR MORE DETAILS GO TO 1AND1.COM

1&1 HOSTING

Market Your Website

Make your site interactive and increase communication with 1&1.

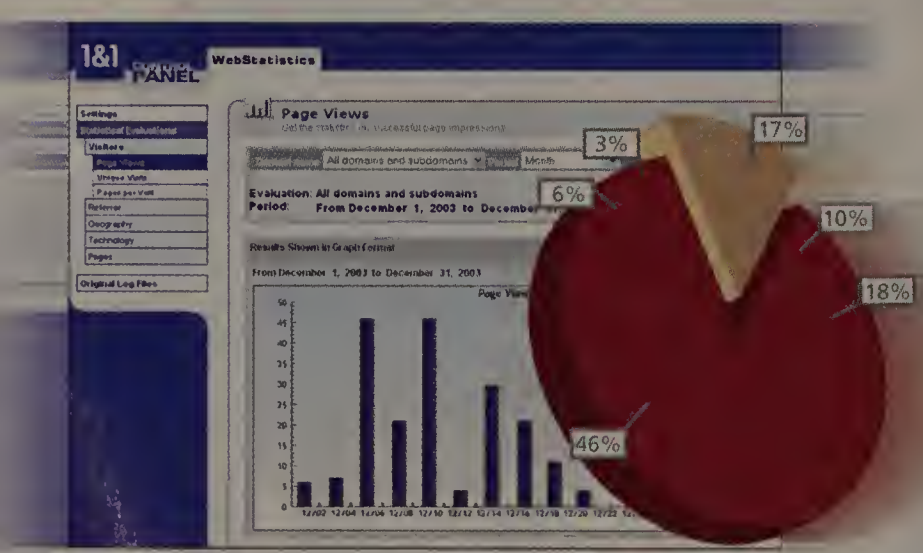
Easily add features to enhance your website. 1&1 gives you the tools that let you effectively communicate with your customers and site visitors, keep them intrigued and keep them coming back for more. Your 1&1 hosting package comes complete with high performance features that let you connect with your visitors through live interaction, feedback forms, e-mail newsletters and more and gives them exactly what they are looking for. Best of all, these tools are so easy to use that no programming knowledge is needed!

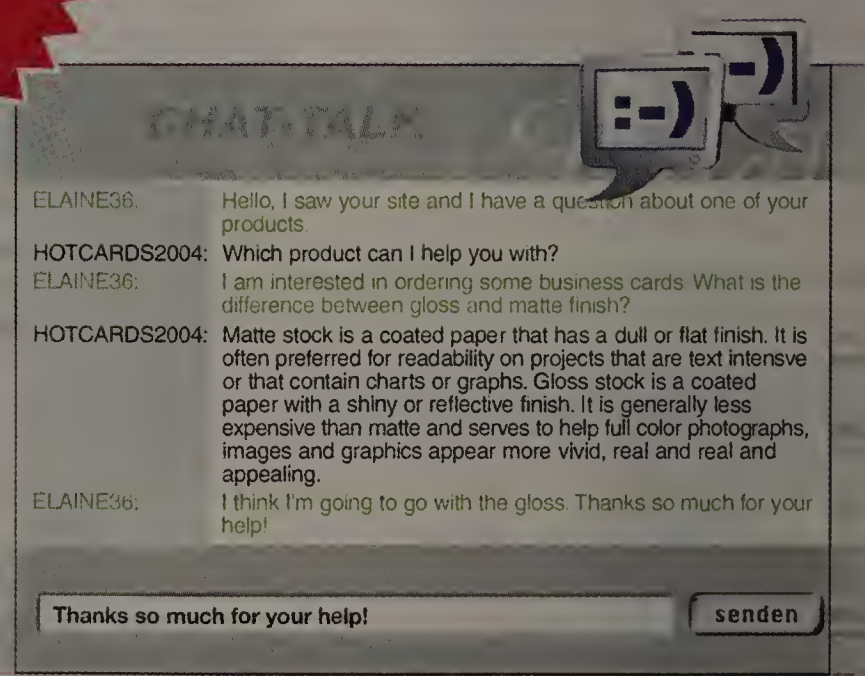
ALL WEB TOOLS INCLUDED

WITH BUSINESS & DEVELOPER PACKAGES!*

1&1 WebStatistics

Use comprehensive statistics to understand visitor dynamics and adapt your site to your visitors. Included with ALL shared hosting plans!





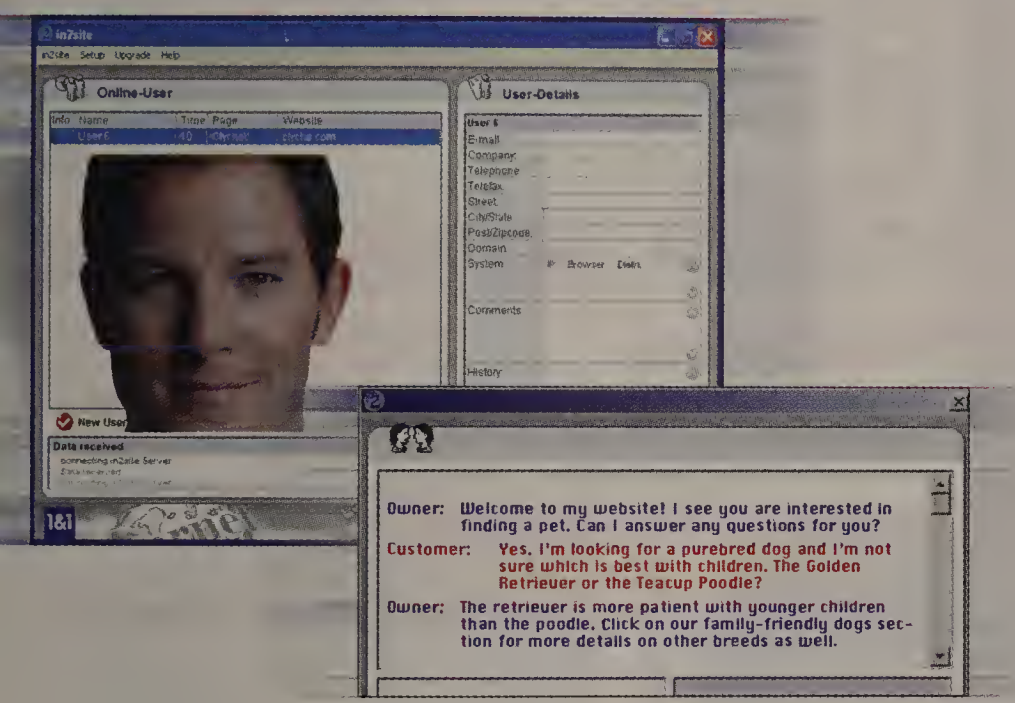
Chat & Forum

Provide a meeting place for your customers and add information and entertainment value to your site. Included with ALL shared hosting plans!

1.877.GO1AND1

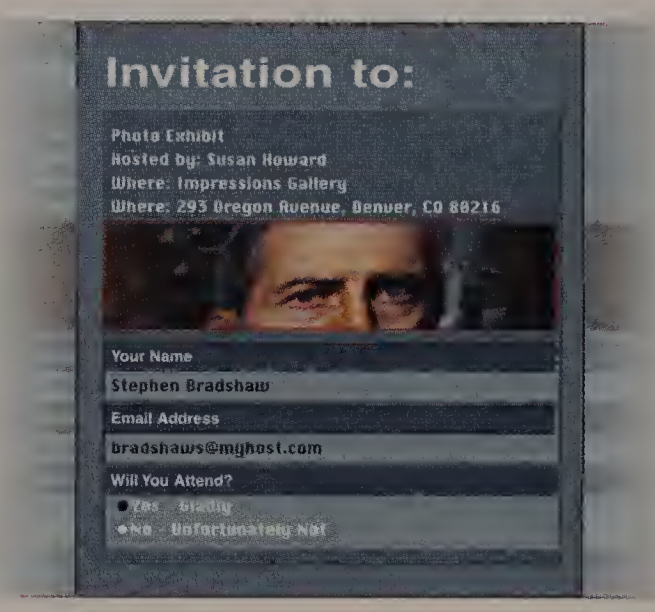
In2site Live Dialogue*

Give site visitors personalized customer service and support live and in real time.



1&1 WebElements*

Add template-driven contact forms, online polls and more and customize them to fit your site.



Membership List

Alan Bishop	634 E. 39th Street, New York, NY 10019	alanb@myhost.com
Stephen Bradshaw	1954 Corgin Street, Hudson, OH 44236	bradshaws@myhost.com
Catherine Leonard	64 Stanhope Drive, Pittsburgh, PA 15237	family@ myname.com
Carl Brown	653 Liberty Avenue, Wilmington, NC 28403	brownc2521@lycos.com
Tom Stowe	26 N. Hills Road, Chandler, AZ 85226	webunited@gmx.net
Helen McSweeny	817 Providence Hwy, Boston, MA 02116	helenmcsweeney@hotmail.com

1&1 WebDatabase*

Easily create and integrate customized databases into your website with no programming knowledge needed.

1&1 Newsletter Tool*

Easily create and send professional looking e-mails to share news and information with your visitors.

*Home packages do not include WebElements, In2site Live Dialogue, WebDatabase or Newsletter Tool.

FOR MORE DETAILS GO TO 1AND1.COM

1&1

1&1 HOSTING

Affordable, all-inclusive, feature-packed hosting from 1&1.

1&1's Microsoft and Linux shared hosting packages offer the best value for your money. Whether you're a novice Internet user or operate a heavily trafficked site, 1&1 has a hosting package that will help you make the most of your web experience.

Home Package

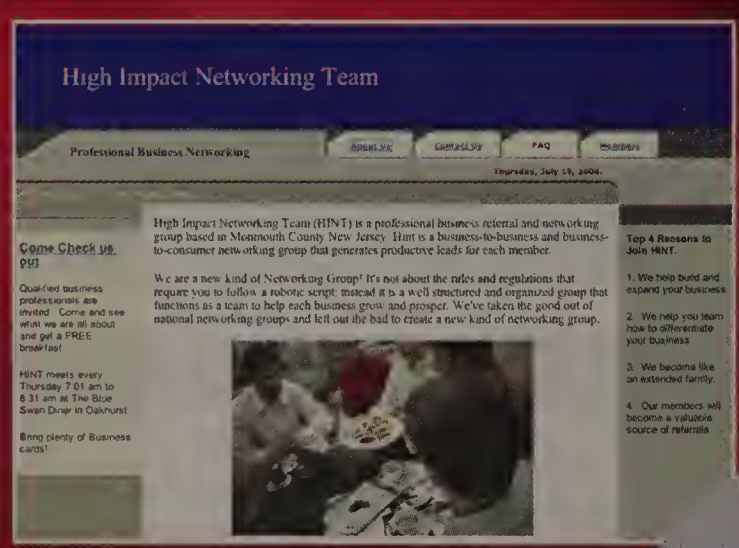
Ideal for creating your family website and publishing your photos or hobbies to the Internet.

Business Package

The easy way for small and medium-sized businesses to build a sophisticated, professional web presence.

Developer Package

Packed with the latest Internet technologies to build powerful, secure and reliable web applications.



"When I signed up for 1&1's 3 year hosting promotion, I was skeptical, but to my delight, 1&1's services were so exceptional that I purchased a Microsoft Hosting account. 1&1's services are so reliable and affordable that I plan on purchasing additional services as my business expands."

George Alto
www.HighImpactNetworking.com

1.877.GO1AND1

90-DAY MONEY BACK GUARANTEE

100% SATISFACTION OR YOUR MONEY BACK

$600 SOFTWARE BUNDLE INCLUDED WITH ALL SHARED HOSTING.

Featuring New Versions of PhotoImpact® and NetObjects Fusion®.

– Linux packages

– Microsoft packages

HOME PACKAGE

FROM $4.99 PER MONTH

INCLUDES 1 DOMAIN

PACKAGE FEATURES		
Web space	500 MB	500 MB
FTP accounts	1	1
Monthly Transfer Volume	25 GB	25 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
1&1 Chat channels	1	1
1&1 WebStatistics	✓	✓
SITE-BUILDING TOOLS		
WebsiteCreator	12 pages	12 pages
Software bundle worth $600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	–	✓
DOMAIN NAMES		
Included Domains	1	1
Subdomains	10	10
Run multiple independant sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
POP3 accounts	50	50
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Symantec Virus Scanners	1 account	1 account
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
Dedicated SSL Certificate	optional	optional
PER MONTH	$4.99	$6.99

BUSINESS PACKAGE

FROM $9.99 PER MONTH

INCLUDES 3 DOMAINS

PACKAGE FEATURES		
Web space	1,000 MB	1,000 MB
FTP accounts	5	5
Monthly Transfer Volume	50 GB	50 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
1&1 Chat channels	5	5
1&1 WebStatistics	✓	✓
In2site Live Dialogue	✓	✓
1&1 Newsletter Tool	✓	✓
1&1 WebElements	✓	✓
SITE-BUILDING TOOLS		
WebsiteCreator	18 pages	18 pages
Software bundle worth $600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	–	✓
ASP.NET, .NET Framework	–	✓
Perl, PHP3 and PHP4	✓	–
1&1 WebDatabase	✓	✓
Database	1 MySQL	MS Access
Cron Jobs	✓	–
SSI (Server side includes)	✓	✓
DOMAIN NAMES		
Included Domains	3	3
Subdomains	50	50
Run multiple independant sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
POP3 accounts	150	150
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Symantec Virus Scanners	3 accounts	3 accounts
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
SSH Secure Shell Access	✓	–
Dedicated SSL Certificate	optional	optional
PER MONTH	$9.99	$12.99

DEVELOPER PACKAGE

FROM $19.99 PER MONTH

INCLUDES 5 DOMAINS

PACKAGE FEATURES		
Web space	2,000 MB	2,000 MB
FTP accounts	25	25
Monthly Transfer Volume	100 GB	100 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
1&1 Chat channels	10	10
1&1 WebStatistics	✓	✓
In2site Live Dialogue	✓	✓
1&1 Newsletter Tool	✓	✓
1&1 WebElements	✓	✓
SITE-BUILDING TOOLS		
WebsiteCreator	25 pages	25 pages
Software bundle worth $600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	–	✓
ASP.NET, .NET Framework	–	✓
Perl, PHP3 and PHP4	✓	–
1&1 WebDatabase	✓	✓
Database	3 MySQL	MS Access, MS SQL
Cron Jobs	✓	–
SSI (Server side includes)	✓	✓
Advanced Developer Tools	✓	–
DOMAIN NAMES		
Included Domains	5	5
Subdomains	200	200
Run multiple independant sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
POP3 accounts	300	300
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Symantec Virus Scanners	6 accounts	6 accounts
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
SSH Secure Shell Access	✓	–
Dedicated SSL Certificate	✓	✓
PER MONTH	$19.99	$24.99

Includes 24/7 support • No setup fee

1&1

FOR MORE DETAILS GO TO 1AND1.COM

1&1 SERVERS

Whatever you need from a dedicated server, 1&1 has the definitive solution.

Dedicated servers from 1&1 offer a broad range of functionality so you can choose the solution that best fits your needs and experience level. From a fully maintained Managed Server, to a Root Server with maximum flexibility and control, to a solid and secure Windows Server, 1&1 will help you take your web presence to the next level.

$25 Million Data Centers

- 99.9% uptime guaranteed
- 18,000 MBit connectivity
- 500 peerings with 250 different providers for optimized routing

Fully Managed Servers

- As easy as shared hosting but with added power and performance
- Complete monitoring, management and maintenance by 1&1
- Security updates and system maintenance
- Server configured and installed by 1&1

Windows Server: Web Edition

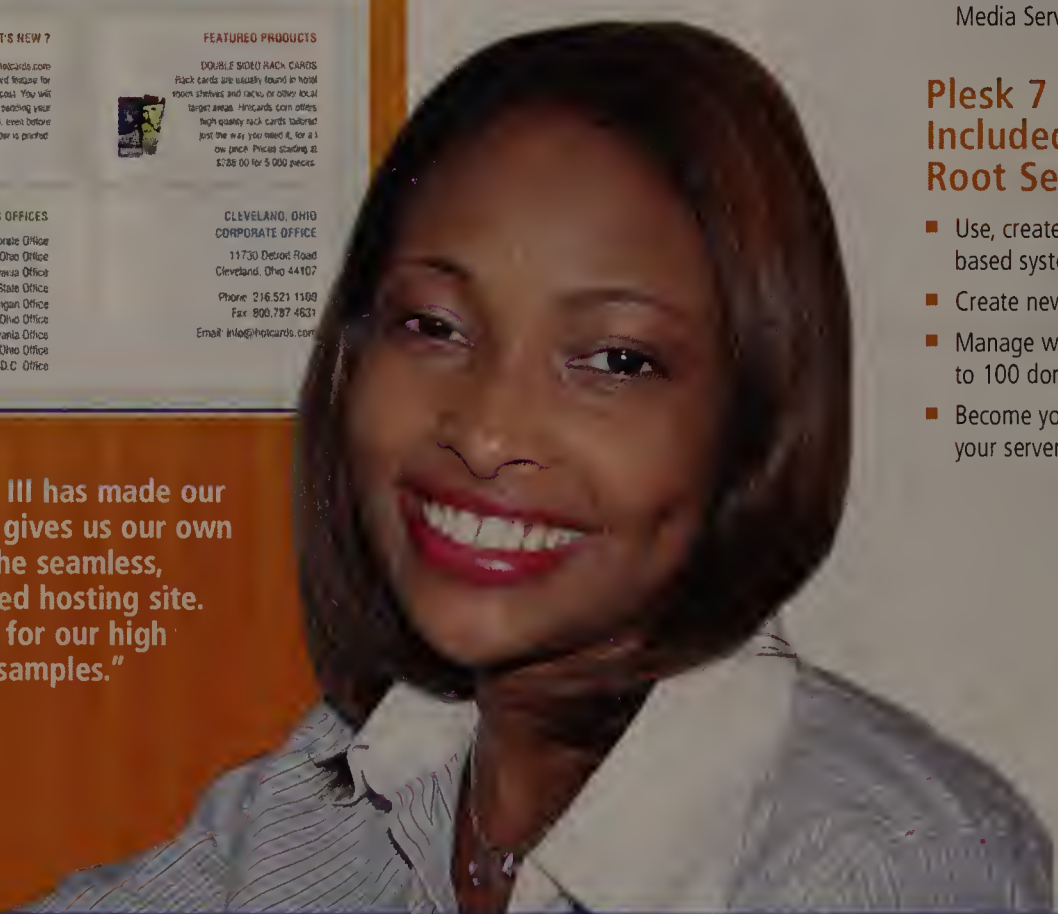
- Included with Server I & II
- Designed for dedicated web serving and hosting
- Remote Desktop Control
- ASP, ASP.NET, MSDE

Windows Server: Standard Edition

- Included with Server III
- Designed to support sophisticated and demanding applications
- Exchange Server installable
- Includes Active Directory, Streaming Media Server, Terminal Services

Plesk 7 Reloaded Included with All Root Servers

- Use, create and manage your Linux-based system
- Create new e-mail accounts
- Manage web spaces plus up to 100 domains
- Become your own host by partitioning your server into shared web space



"Moving to 1&1's Managed Server III has made our business much more efficient. 1&1 gives us our own dedicated server, but we still get the seamless, maintenance-free service of a shared hosting site. Plus, we get all the space we need for our high resolution graphics files and print samples."

Nikki Woodruff
www.hotcards.com

1.877.GO1AND1

MONEY BACK GUARANTEE

90-DAY MONEY BACK GUARANTEE

100% SATISFACTION OR YOUR MONEY BACK

$600 SOFTWARE BUNDLE INCLUDED WITH ALL SERVERS.

Featuring New Versions of PhotoImpact® and NetObjects Fusion®.

1&1 ROOT SERVERS

For Maximum Flexibility and Control

- Plesk 7 Reloaded Control Panel pre-installed
- RedHat Linux 9 Operating System
- Advanced Recovery Tool lets you instantly reboot

PLESK7 RELOADED

1&1 MANAGED SERVERS

For Performance and Convenience

- All the features of shared hosting with the power of a dedicated server
- Continuously updated firewall protection
- 1&1 user-friendly Control Panel for easy administration
- Includes Dedicated SSL Certificate at no extra cost

1&1 WINDOWS SERVER 2003

For Security and Reliability

- Windows Server 2003 Standard Edition with Server III (Web Edition with Server I & II)
- Unlimited administration access
- .NET Framework already integrated

	1&1 ROOT SERVERS	1&1 MANAGED SERVERS	1&1 WINDOWS SERVER 2003
SERVER I Intel Celeron 2.0 GHz 256 MB DDR-RAM 40 GB IDE hard drive 500 GB bandwidth included	$49 PER MONTH	$59 PER MONTH	$69 PER MONTH
SERVER II Intel Pentium 4, 2.4 GHz 512 MB DDR-RAM 40 GB IDE hard drive 500 GB bandwidth included	$69 PER MONTH	$79 PER MONTH	$89 PER MONTH
SERVER III Intel Pentium 4, 3.06 GHz Processor with Hyper-Threading 1 GB DDR-RAM 120 GB IDE hard drive 500 GB bandwidth included	$99 PER MONTH	$109 PER MONTH	$129 PER MONTH

Includes 24/7 support • $99 one-time setup fee

1&1

FOR MORE DETAILS GO TO 1AND1.COM

1&1 eSHOPS

Easy, yet sophisticated e-commerce solutions.

1&1 eShops are as powerful as any major online retailer, but with no software or hardware to install. Online wizards and a wide range of professionally designed templates offer such simplicity that your online shop can be up and running in less than an hour. Plus, 1&1 eShops are fully compatible with your current site, regardless of which hosting provider you use. 1&1 eShops include all the web space and bandwidth you need and require no additional hosting plan to get your online storefront open for business.

"A great experience is what we have encountered with our new 1&1 Developer eShop. 1&1 gives us exceptional value, high quality, and a level of customization that we never had before. With very little effort we can offer discounts, purchase orders and more."

Jesus F. Moreno
shop.gitanosoftware.net

1.877.GO1AND1

MONEY BACK GUARANTEE

90-DAY MONEY BACK GUARANTEE

100% SATISFACTION OR YOUR MONEY BACK

30+ professional shop templates

- Ready to be loaded with your products
- Designed by experts
- Customizable with different fonts, colors and positioning
- Easy, economical and fast

Online payments via PayPal and WorldPay

- Secure
- Easy to use
- No merchant account necessary with PayPal
- Connect with 35,000 loyal PayPal users – with no paperwork or bank application

8 easy-to-use wizards

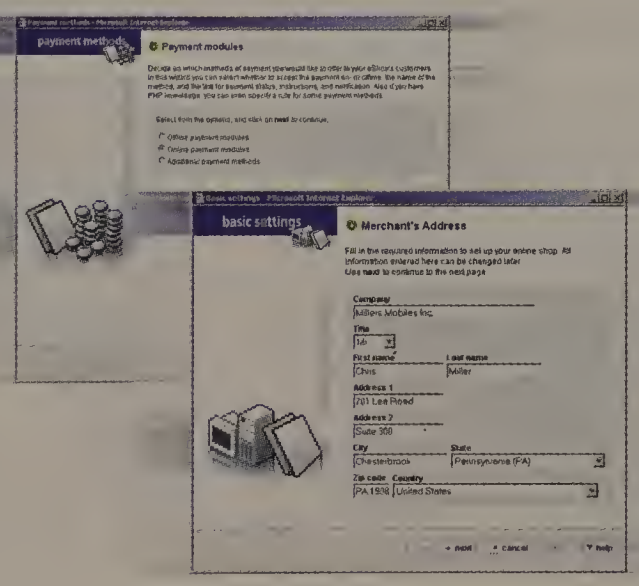
- Step-by-step guides
- Quickly and simply configure:
  - Shopping basket
  - Order processing
  - Tax clearing
  - Delivery methods
  - Payment settings

All-inclusive hosting solution

- No software installation
- Traffic and web space included
- Updates and enhancements handled automatically
- 1&1 WebStatistics included

SSL secured

- All shop-based settings created in SSL secured pages
- Maximum integrity of confidential data
- Fully protected from third-party access



BUSINESS eSHOP

- 50 MB web space
- 10 GB monthly transfer volume
- 50 item product catalog
- Choice of 2 shipping methods

$9.99 PER MONTH

PROFESSIONAL eSHOP

- 300 MB web space
- 30 GB monthly transfer volume
- 200 item product catalog
- Unlimited item variants
- Choice of 5 shipping methods
- Multi-currency support
- Newsletter editor
- Import/export customer data
- Online credit card clearing with PayPal and WorldPay
- Tax clearing server (calculates taxes by state, county and city)

$29.99 PER MONTH

DEVELOPER eSHOP

- 1200 MB web space
- 60 GB monthly transfer volume
- Unlimited item product catalog
- Unlimited number and depth of sub-categories
- Unlimited shipping methods
- Multi-currency support
- Newsletter editor
- Import/export customer data
- Online credit card clearing with PayPal and WorldPay
- Tax clearing server (calculates taxes by state, county and city)
- FTP access
- Customer account management
- Fully customizable templates
- Dedicated SSL Certificate included
- In2site Live Dialogue

$49.99 PER MONTH

Froogle Search

Help your customers find your online products quickly and easily. Available with 1&1 Professional and Developer eShops, Froogle allows users to find the products they want and provides links to the stores that sell them. Users can click through to your business and buy direct from you.

Google Conversion Tracking

1&1 eShops support Google Conversion Tracking! Identify the effectiveness of your AdWords campaigns and make better decisions about the ads and keywords in which you invest. Receive detailed statistical reports outlining trends – from the campaign to the keyword level.

Includes 24/7 support • No setup fee

1&1

FOR MORE DETAILS GO TO **1AND1.COM**

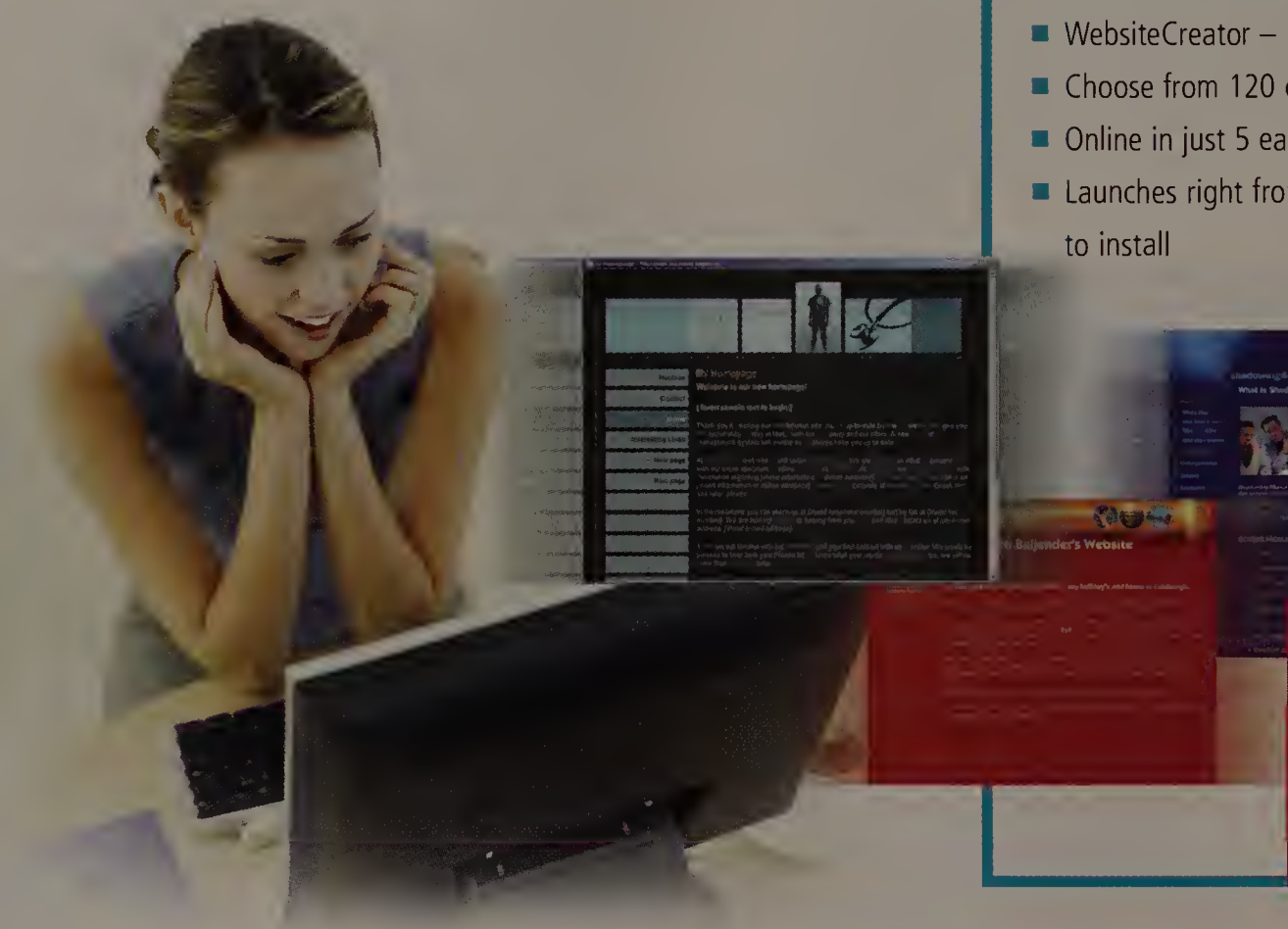
WEBSITE IN AN INSTANT

Create your ideal website in just 20 minutes.

With 1&1 Instant Website you can build a 12-page site quickly and easily using WebsiteCreator. Whether you're a beginner building your first site or an experienced user looking for a quick additional site with no programming hassles, 1&1 Instant Website offers the quickest, easiest, most feature-rich solution.

1&1 INSTANT WEBSITE

- Create your own website in just 20 minutes
- Ideal for beginners and experienced users alike
- WebsiteCreator – 12 pages included
- Choose from 120 customizable templates
- Online in just 5 easy steps
- Launches right from the 1&1 Control Panel – no software to install



$2.99 PER MONTH

1&1 makes it fast and easy to establish your presence online. Simply register your domain for just $5.99/year. Then sign up for 1&1 Instant Website and easily and affordably create a professional website in minutes – with no HTML knowledge needed!

.COM .NAME
.NET .ORG
.INFO .US

REGISTER DOMAINS FOR: $5.99 PER YEAR

Member of united internet

1&1

FOR MORE DETAILS GO TO 1AND1.COM

Annoyance Busters

24 great utilities and tools that smack down hassles with data, security, Windows, and your hardware.

DO YOU SUFFER from high blood pressure, migraine headaches, and a near-irresistible urge to throw expensive computer gear out the window? Your PC may serve up more disappointments than the Boston Red Sox in a late-September swoon, but hope is not lost. An array of useful utilities and tools can do much to smooth over your system's most glaring flaws. And you may be surprised to learn that many of the fixes for these niggling annoyances can be had for free. ▶

BY MICHAEL DESMOND

ILLUSTRATIONS BY MARK MATCHO

Slowdown **Busters**

SLUGGISH PC performance can test the most even-tempered person's patience. These utilities help provide a boost.

Clogged Windows

OVER TIME, Windows can become so stuffed with spurious, forgotten, and corrupted Registry entries that it's amazing the operating system works at all; determining what exactly is slowing the works can be supremely difficult. **RegSeeker** gets things flowing again by cleaning out Windows' rusty pipes. Like other Registry cleaners on the market, RegSeeker can identify and then change or remove invalid or unused entries. Of course, every Registry tweak comes with an element of risk, so use the program's Registry backup feature before making any changes. Free, find.pcworld.com/43638

Painfully Slow Acrobat Loads

ADOBE READER 6 could be one of the slowest-loading applications around—and that's really saying something. The fault lies with all of the sundry plug-ins that Adobe Reader insists on loading every time it launches—plug-ins that most people never use. Put some snap back into Adobe Reader's step with **Adobe Reader Speed-Up**, which prevents those resource-hogging plug-ins from loading. You can even customize the utility to load only select modules. Without further ado, Adobe Reader launches in an instant. This must-have utility works with Reader versions 3.0 to 6.01. Free, find.pcworld.com/43640

Windows Bulge

WE ALL KNOW the frustration of Windows bloat. The operating system is loaded with programs, services, modules, and applets that most of us don't need and probably won't ever employ. An incredibly handy utility, **XPLite** lets you strip out unwanted Windows XP features and unnecessary modules. The result is a lean and mean operating system that loads more quickly, responds faster, and occupies significantly less space on your hard drive. You'll also find versions that are compatible with Windows 98 and Windows 2000, which could extend the life of aging PCs. $40, find.pcworld.com/43642

Dawdling Video Downloads

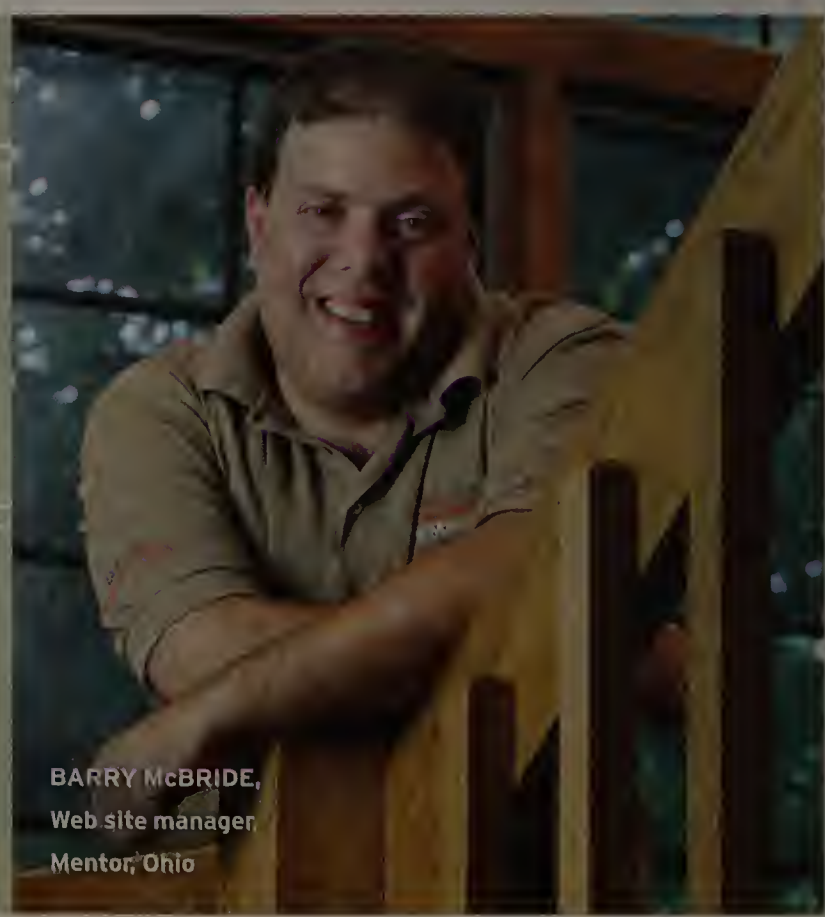
WHY DOES capturing video from MiniDV camcorders have to be so frustrating? Many applications that handle this task are complicated, confusing, and unstable; some, like Windows Moviemaker, force you to use their own proprietary format. Thank goodness for **Scenalyzer Live**. If not for it, you might be staring at countless hours of unedited footage. This snappy little applet does one important thing remarkably well: It grabs DV-format video off FireWire-equipped digital camcorders

MY FAVORITE FIXES

Easy Uploads and No Spam

THE ANNOYANCE: I didn't know what busy was until I left my consulting job at Accenture to launch a fan Web site and a monthly magazine about the Cleveland Browns football team. I found myself constantly jumping in and out of FTP programs to upload articles and layouts to remote servers. I spent precious time battling spam, too. Despite the improved filtering in Outlook 2003, the flood of garbage threatened to overwhelm my inbox.

THE FIX: I installed WebDrive (see page 128), a nifty FTP program that lets me place remote drives and folders directly within Windows Explorer. No more fussing with a clumsy FTP interface or with tools like Microsoft FrontPage—I just drag, drop, and transfer. To deal with spam, I rely on SpamNet (find.pcworld.com/43860). It flags and deletes unsolicited e-mail messages for me, using an automated feedback mechanism to identify spam broadcasts as they emerge on the Internet. I couldn't work without it.



BARRY McBRIDE,
Web site manager,
Mentor, Ohio

PHOTOGRAPH: BRUCE ZAKE

40% Percentage of Web users who say pop-ups are the most annoying ads

—JUPITER RESEARCH

and captures it to hard disk. On top of that, the program also provides automatic scene splitting—by detecting breaks in the original recording—to help you find and work with specific portions of footage. No more wrestling with wretched, crashing bloatware. Now you can simply launch, capture, and—at your leisure—edit. $39, find.pcworld.com/43652

Data Glitch **Busters**

EVER WONDER exactly what your PC is up to? These utilities will help you unravel the mystery and find out the answer.

Is Windows Frozen?

SO YOU CLEVERLY stashed your home PC behind a desk or in a cabinet to clear some needed floor space. But now you can't see the LED that indicates hard-disk activity, so you can't tell whether Windows is frozen or whether the system is simply waiting for data to spool off the disk. **Diskmon** helps eliminate the guesswork. This tiny utility sets up shop in the Windows system tray and blinks whenever the disk is working—just like the activity light on the front of most PC cases. It also keeps detailed tabs on the activity, producing a staggering log of file reads and writes. Free, find.pcworld.com/43632

Disk Space Dilemma

MP3S, VIDEO FILES, digital photos...this stuff can fill up hard disks fast, and it can be tough to tell where the data is going. Sure, if you hover a mouse pointer over a folder in Windows XP, a tool tip pops up showing how much data is in that folder and its subfolders. But to see precisely where all of the data is, you need **JDisk Report**, a utility that produces a highly detailed, graphical overview of files and folders on your hard disk. You can call up a pie chart that displays a great overview of the folders consuming the most disk space; dive into a detailed table that reveals file names, dates, and sizes; or explore an easy-to-peruse chart that shows the distribution of files by size ranges. Free, find.pcworld.com/43634

What's Really Going On?

HAVE YOU EVER wondered what's happening behind the scenes in Windows? The Windows Task Manager—which you access by pressing <Ctrl>-<Alt>-<Del>—shows a terse list of applications and processes running on your PC. Unfortunately, you can't tell what these processes are doing or where they come from. **Process Explorer** sheds some much-needed light on those mysterious background apps, permitting you to drill down to see what folder an application started from and what resources it is using. This utility can also help you identify spyware and other nefarious background processes. Free, find.pcworld.com/43662

Can't Find Duplicate Files

A 250GB HARD disk can hold an awful lot of files—and the task of preventing duplicate files from piling up and getting misplaced can be difficult. Regrettably, Windows Explorer won't let you compare two directories side by side. **Xplorer2 Lite** is a Windows Explorer replacement that makes it easy to compare directories, sniff out duplicate files, and find the most recent version of files across directories. This is an especially terrific tool for people who need to sync the contents of desktop and mobile hard drives. For $25, you can obtain Xplorer2 Pro, a version that adds advanced searching, FTP and Web syncing, and subfolder disk usage statistics. Free, find.pcworld.com/43636 ▶

HARDWARE HASSLE

Scattershot Peripheral Hookups

VENDORS OFTEN CHARGE hundreds of dollars more for printers that can hook directly to your network, and most scanners aren't even networkable. But with so many homes sporting two or more computers these days, it would certainly be convenient to share these devices. Now you can, with the **Keyspan USB Server**, a four-port USB 1.1 module that plugs directly into your ethernet network. Just like that, you can hook any USB-equipped printer, scanner, or other compatible device into the Keyspan USB module and have it be available to all of the PCs on your network. Our only quibbles: A fast USB 2.0 model would be welcome for sharing hard drives, and we still have to get off our lazy duffs and walk to the printer to retrieve our documents. $129, find.pcworld.com/43674

29% Percentage of Web users who say spam is the most annoying ad type

—JUPITER RESEARCH

PHOTOGRAPH: MARC SIMON

Clutter **Busters**

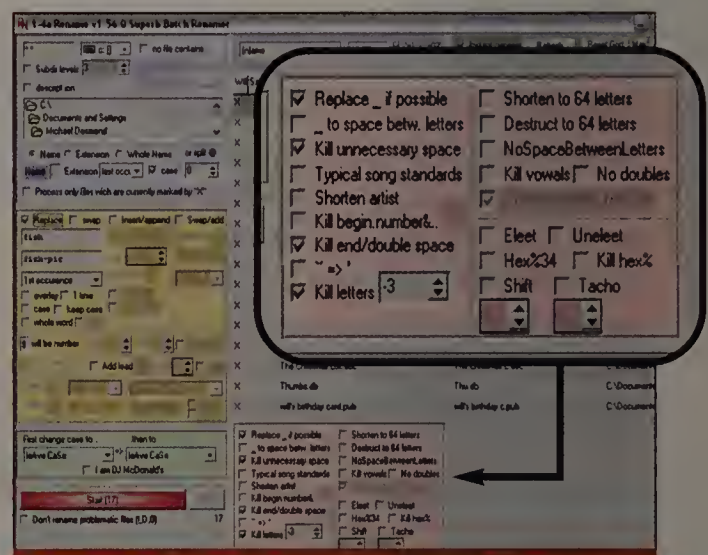
FINDING BURIED files and keeping your PC neat and tidy can insidiously eat away at your productivity. These utilities speed up the process without requiring you to take a crash course in new methods.

Hidden Windows Features

SOMETIMES Windows seems to be doing its utmost to hide information from your inquisitive eyes. Whether you want to scope out CPU utilization, check on free hard-disk space, or see right now how much data is moving to and from your system, Windows forces you to plunge into the Control Panel, the Task Manager, and various applets in search of the lowdown. One handy solution is to install **StatBar**, a sleek and slim status bar that tucks in neatly at the top or bottom of your screen and puts scads of controls—including program launch buttons, a master volume slider, and Winamp audio controls—right at your fingertips. Free, find.pcworld.com/43644

What's the Date Today?

WANT TO know the time? Easy: Look at the little time display in the Windows task pane. But if you want to check the date, you have to hover the mouse pointer over the readout until a tool tip appears—and half the time, the tool tip doesn't come up at all. **TClockEx** dispenses with extra mousing by displaying the current time, date, and day in the location where the Windows clock used to sit, in the format of your choice. It will even display CPU utilization and memory loading. It's tiny and efficient—you install it, set it up once, and never fiddle with it again. Free, find.pcworld.com/43646



WITH 1-4A RENAME, you can replace portions of text or truncate file names in batches.

Window Disorder

TOGGLING BETWEEN application windows can be a slippery business. Before you know it, you have a dozen separate program windows open, all stacked up in a pile and obscuring your work. **AllSnap** helps clean up the multitasking mess by making the edges of your application windows sticky. Drag a browser window toward the upper-right corner of the screen, and AllSnap nudges it into the corner. Pull two Word document windows side by side, and AllSnap clicks them together. This little utility turns Windows from point-and-slide to point-and-click. Free, find.pcworld.com/43648

Renaming Files Can Be a Drag

AS A RESULT of the cryptic file names that digital cameras tend to assign to photos, many photography enthusiasts must laboriously rename dozens of files at a sitting. **1-4a Rename** takes the drudgery out of those makeovers, letting you rename multiple files (even in different folders) with the aid of its controls and an impressive set of filters. You can strip out a specific string of characters in unnecessarily long file names and replace it with, say, today's date; or you can remove capitalization, spaces, and nonstandard characters. The basic mode has a few useful rename filters, while the rather intimidating Expert Mode should meet the needs of all but the most sophisticated users. Free, find.pcworld.com/43650

HARDWARE HASSLE

Too Many Power Adapters

IF YOU CARRY a lot of electronics gear when you travel—a PDA, a cell phone, a digital camera, and perhaps even more—you probably haul around a wad of power cables and chargers, too. Cut the clutter with **Zip-Linq USB cables and power adapters**. You can plug these cables into a PC's USB port to send juice to handheld devices, or you can attach separate modules to allow the devices to draw power from either 110-volt wall sockets or 12-volt car cigarette lighters. Zip-Linq sells an array of adapters for different cell phone models and other products. Now you can lighten your load when you're on the road. $10 to $20, find.pcworld.com/43678

PHOTOGRAPH: MARC SIMON

233 Number of adware applications that were in existence in June 2004

—PESTPATROL

So Many CDs, So Few Drives

EVERY TIME THE kids want to play Legoland, I find myself scanning multiple bookshelves, sorting through stacks of jewel cases, and scrounging around in desk drawers in search of the game's wayward CD. **Alcohol 52%** is a CD emulation program that lets you store on your hard drive images of the CDs that you use frequently. The software then tricks Windows into thinking that the CDs are in the drive when you launch the programs. Gone is the frustrating ritual of hunting for CDs—that is, if you have the disk space to hold all of them. Each CD that you store on the hard disk can consume up to 700MB of space. If you want to burn backups of your favorite CDs and DVDs, check out Alcohol 120% ($50). Now when Junior scratches a disc, it won't spell disaster. $35, find.pcworld.com/43654

Infection & Hacker **Busters**

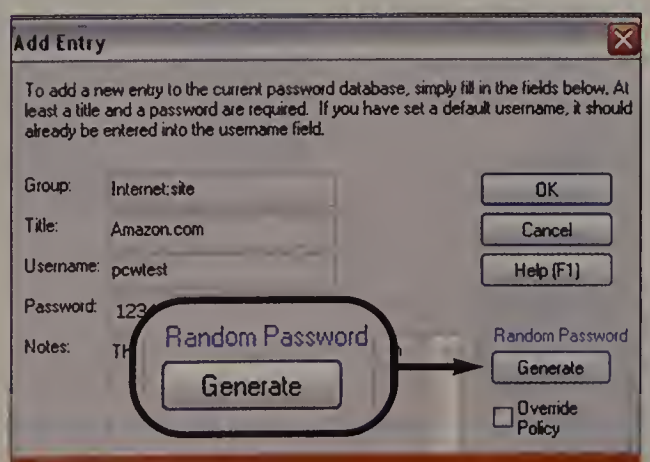
WHY IS IT such a struggle to keep your computer data secure and your privacy intact? This quartet of handy utilities will help you block unwanted intrusions and stave off legions of prying eyes.

Too Many Passwords

SO MANY WEB sites and networks require a log-on that people frequently resort to using easy-to-remember passwords that are a cinch for computer-literate lowlifes to crack. It doesn't have to be that way. **Password Safe** is an encrypted database that securely stores all your user name and password entries in a single place so you can copy and paste complex passwords into Web pages and system log-on screens. The only password you have to remember is the one you use to access the scrambled Password Safe database. Most important, with this tool you can afford to use long and complicated passwords—the types that are highly resistant to being cracked—for all of your various log-ons. Free, find.pcworld.com/43660

The File Isn't Really Deleted

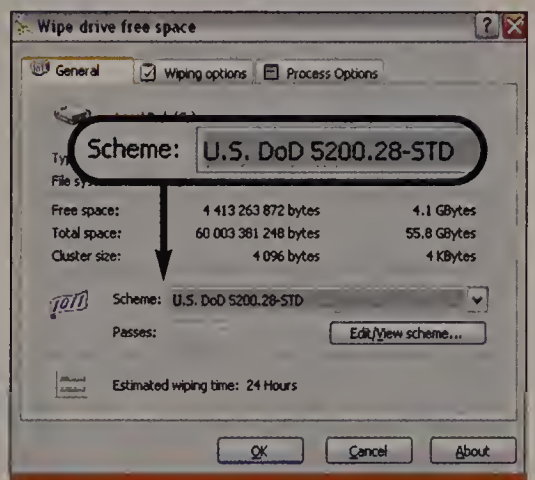
WHEN YOU DELETE a file in Windows, it isn't actually gone. Only the pointers to its locations on the hard disk (and the first letter of its file name) have been removed. Consequently, anyone who has access to your computer can come along with a half-decent file-recovery tool and pull up all sorts of valuable, confidential data from your disk. **BCWipe** clears out files for good by overwriting with random data the portion of the disk that contains a given file. You can adjust wiping levels to suit your degree of paranoia, from quick one-pass wipes to military-grade cleansings that will overwrite files half a dozen times or more. Also, BCWipe scrubs swap files and free disk space, both of which can house bits and pieces of private data. You can schedule relatively time-consuming operations—such as overwriting large swaths of the disk—to happen overnight. $40, find.pcworld.com/43656



THE GENERATE button in Password Safe creates complex passwords that are difficult to crack.

Stop Tailing Me!

ARE YOU SICK and tired of having your every move logged by nosy Web sites? Or having your files, including the sensitive ones, silently stored by Windows—for months on end—in cryptically named, hidden subfolders? **IE Privacy Keeper** is a compact utility that wipes the slate clean every time you start or exit Windows. Cookies, temporary files, lists of recently opened files, Internet Explorer URL history, AutoComplete lists—all of these and more are banished from your hard drive. You can even instruct the applet to delete specific files or Registry keys to ensure that every trace of your movements is lost. When you select the Secure Delete option, IE Privacy Keeper will overwrite the data that it deletes with random bits, thereby foiling outsiders' attempts to recover old files without your permission. Free, find.pcworld.com/43658



BCWIPE CAN cleanse your hard drive according to standards set by the U.S. Department of Defense.

Flash Finagling

NOT ONLY CAN Flash animations make an unwelcome (and unexpected) racket when they launch automatically, but they can also bypass most pop-up blockers—which means that a Flash file carrying malicious ▶

50% Percentage of rebate seekers who had problems or got no rebate

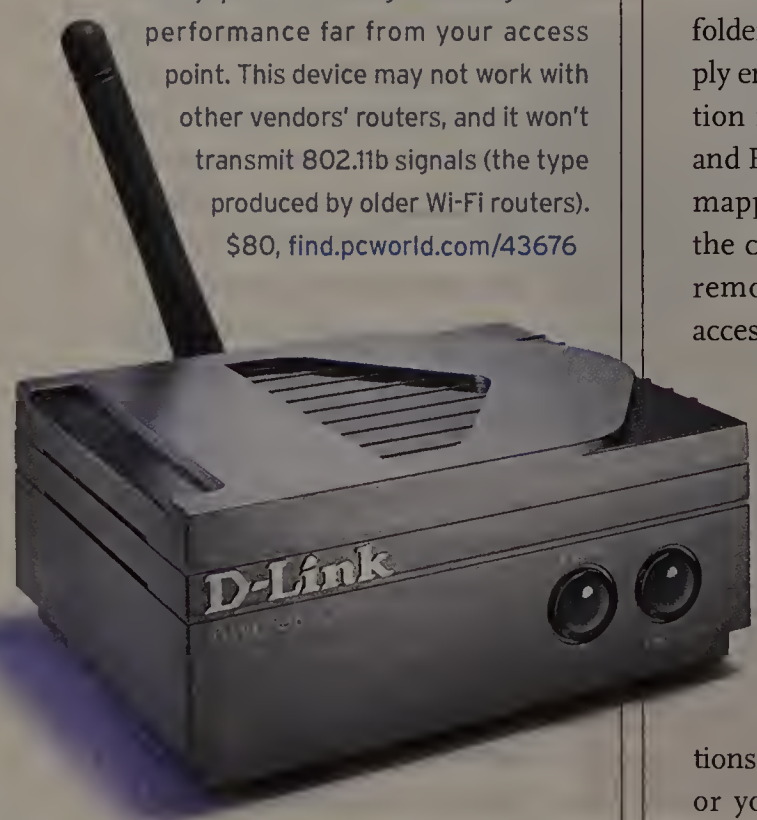
—ABERDEEN GROUP

code has the potential to infect your computer with a virus. **TurnFlash** offers a trustworthy cure for this vulnerability: It enables you to toggle the Flash playback capability in Internet Explorer on or off anytime you want. When you arrive at a site where you would actually like to see the Flash animation play, all you have to do is click the taskbar icon. Afterward, if you click the TurnFlash icon again, Flash playback in IE will be disabled once more. It doesn't get much easier than that. Free, find.pcworld.com/43664

HARDWARE HASSLE

Weak Wireless Signals

WIRELESS networking is all about having room to roam. But laptops and handhelds can lose signal strength as you move from one side of the house to the next. The **D-Link DWL-G800AP Wireless Range Extender** can double the range of your 802.11g networking gear. Place it on a remote side of the house, and enjoy maximum signal strength and performance far from your access point. This device may not work with other vendors' routers, and it won't transmit 802.11b signals (the type produced by older Wi-Fi routers). $80, find.pcworld.com/43676

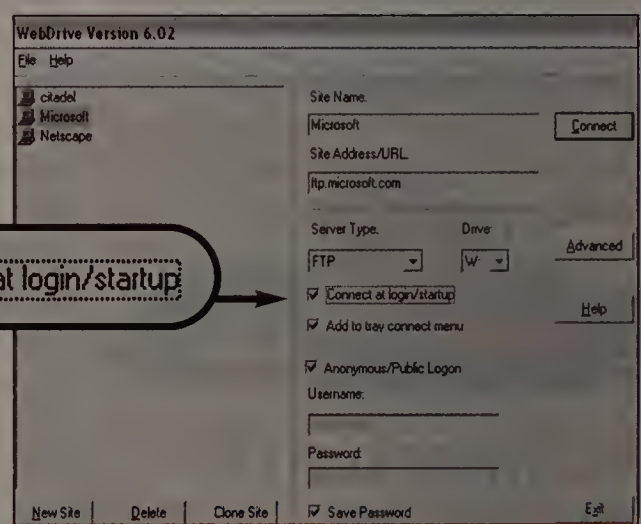


Online Bugaboo **Busters**

SOMETIMES SENDING files across the Internet, or dealing with issues with your home network, can be a big pain. These utilities keep the process smooth.

Frustrating FTP Interfaces

IF YOU FREQUENTLY publish files to Web sites or upload files to remote servers, you probably use file transfer protocol tools a lot. But even the best FTP programs rely on laborious log-ons and clunky interfaces that make connecting and transferring files from a local hard drive harder than necessary. **WebDrive** changes all that, displaying remote directories as just another folder in Windows Explorer. Simply enter the FTP server information in the WebDrive interface, and Explorer updates with a new, mapped network drive showing the contents of the remote server. The remote drives and folders you want to access are where you need them, all the time. $40, find.pcworld.com/43668



ONCE YOU CLICK the Connect at Login/Startup box, WebDrive links to the remote server.

Faulty FTP Transfers

SPEAKING OF FTP transfers, how many times have you needed to get someone a file—absolutely, positively right now—but found yourself stymied by downed mail servers or arbitrary file-size limitations on e-mail attachments? Unless you or your cohort runs an FTP site, you might be out of luck. **Pumpkin TFTP** lets you send files to another person, without requiring e-mail servers or FTP sites. You just find the local file, enter the target IP address, and then set up the connection with the required ID and password information. You can also enter the file location and name, along with a source IP address, to grab files from remote systems. Free, find.pcworld.com/43670

Network Nonsense

MORE WINDOWS PCs are networked than ever before, and yet Microsoft has barely lifted a finger to help users sleuth problems and mysteries with their home networks. If you want to check whether a computer at a particular IP address is working, you still have to open a DOS box to run the aged ping command. It's all so...so...1986. **Angry IP Scanner** lets you ping a range of IP addresses, and it returns ping rates, host names, and active IP addresses—all wrapped up in an attractive, easy-to-read Windows interface. It's the perfect utility to use when you need to figure out what PCs are actually connected to your home wireless network. Free, find.pcworld.com/43672 ■

PC World contributor Michael Desmond is a freelance writer based in Vermont.

PHOTOGRAPH: MARC SIMON

25% Percentage of pop-up and pop-under ads blocked by software

–JUPITER RESEARCH

LINKSYS®
A Division of Cisco Systems, Inc.

VOICE OVER IP SOLUTIONS

Savings That Get You Talking!

Use The Internet To Save Money On Phone Calls!

Phone Adapter with 2 Ports

Make the most of your high-speed Internet service! Use the latest Voice over IP (VoIP) technology from Linksys to cut your phone bill. Simply plug the Linksys Phone Adapter into your router and connect a standard telephone. When you sign up for a Voice over IP service package*, you'll get great features like:

- Unlimited local and long distance calling.
- Free Voice Mail, Caller ID, and more.
- Great International rates!

Available at:

STAPLES®
that was easy.℠

Visit www.Linksys.com/Voice for details, or call our Advice Line at:
1-800-546-5797

* A Voice over IP service package from a specific provider is required, and sold separately. Linksys is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Copyright © 2004 Cisco Systems, Inc. All rights reserved.

CISCO SYSTEMS

RU Annoying?

YOU DON'T HAVE TO SELL operating systems or advertise wireless spy cameras to exasperate people. Technology gives all of us the power to reach out to friends, family, coworkers, and people we've never even met and bug the bejesus out of them. Take this quiz to see where you stand on the annoyance scale.

You may be annoying if:

♦ Your instant messages average three emoticons, at least one of which is animated and makes cute remarks.

♦ Your personal Web page includes any of the following:
- More than 12 photographs of your family pet
- More than 10 photographs of you
- Any picture of you naked

♦ When your best friend's PC crashes and destroys 3 hours of work, you say, "Of course, that wouldn't happen if you were on a Mac."

♦ Your PC announces the arrival of an e-mail message by playing a clip from *Joanie Loves Chachi*.

♦ You view a dinner party at a friend's place as a great opportunity to rip their CDs.

♦ You're so worried about the voice quality of your cell phone that fellow commuters have dubbed you Mr. Shouty.

♦ You forward long e-mail threads with no explanation of why you're sending the message or what the recipient should do with it.

♦ Your cell phone's ring tone is the entire *1812 Overture*. (One bonus point if you love it so much that you wait until it's over to answer your call.)

♦ You agree with the statement: "Riding the bus gives me a perfect opportunity to call my doctor and describe that wart I'm worried about."

♦ You send your coworkers files saved in WordPerfect's native format. Sooner or later, they'll realize it's superior to Microsoft Word!

♦ Your voice-mail greeting at work describes your exact hour-by-hour whereabouts over a two-day span. (Two bonus points if you haven't changed the greeting since November 2003.)

♦ You wear more than three electronic devices in holsters on your belt.

♦ IYHO, it's gr8 2 uz creative spellings in msgs & LOL 2 ;-)!

♦ You figure that if you hold your BlackBerry in your lap below the table, your coworkers won't notice you're checking e-mail while they're talking.

♦ You end all of your e-mail messages with a quotation from an obscure nineteenth-century German philosopher. (One bonus point if the quote is *in* German.)

♦ You attached so many pictures to your last e-mail message that it brought down mail servers all along the eastern seaboard.

♦ Your six-year-old belts out "You Light Up My Life" on your voice-mail greeting. ■

DO THE MATH

Results: Pest or Paragon?

GIVE YOURSELF one point for each statement that describes you, plus bonus points where noted.

0-7: MENSCH
You're not bugging anyone. You'll have to try harder!

8-14: IRRITANT
Better block caller ID, or no one will take your calls.

15-21: PARIAH
Even your mother put you on her spam blacklist.

ILLUSTRATIONS: ZOHAR LAZAR

Acer recommends Microsoft® Windows® XP Professional.

www.pleasing.it - ADV

September 2004

MOBILE TECHNOLOGY

Acer® TravelMate® 4000

Wide-Screen Viewing at an Affordable Price

Why let your budget keep you from getting a notebook with a generously sized display? The **Acer TravelMate 4000** comes with an affordable price plus a giant 15.4" LCD that allows easy side-by-side document viewing. You also get **Intel® Centrino™ Mobile Technology** for dynamite performance and up to five hours of battery life (depending on configuration and usage). And you'll stay connected without being tied down thanks to the integrated 802.11b/g wireless LAN.

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Professional or
  - Microsoft® Windows® XP Home Edition
- 512MB DDR333 SDRAM
- 40GB[1] hard drive
- Integrated CD-RW/DVD-ROM combo drive
- Intel® Extreme Graphics 2
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 4001WLCi-XPP

$1,299

INTEL® PENTIUM® M PROCESSOR 705
(1.50GHz, 1MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
AND 15.4" WXGA (1280 x 800) TFT DISPLAY.
(LX.T5306.004)

Acer TravelMate 4001LCi-XPP

$1,199

INTEL® PENTIUM® M PROCESSOR 705
(1.50GHz, 1MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
AND 15.0" XGA (1024 x 768) TFT DISPLAY.
(LX.T5306.013)

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

For the name of a reseller near you or further information, please call Acer or visit our Web site:

800-571-2237

www.acer.com/us

acer

Empowering People

acer

Acer® TravelMate® C300
Convertible Tablet with 14.1" Display

The Acer TravelMate C300 is the convertible Tablet that you'll want to use as your primary computer. With a big 14.1" XGA display—a first for a Tablet PC—full-size keyboard and internal, modular optical drive, it's similar to a standard notebook but offers more. The screen becomes a writing surface when you rotate it and fold it back over the keyboard, perfect for taking notes, annotating documents and completing online forms.

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Tablet PC Edition
- 4-in-1 card reader
- 14.1" XGA (1024 x 768) TFT display
- Intel® Extreme Graphics 2
- 802.11b/g WLAN, Bluetooth™, 10/100 LAN, V.92 modem

Acer TravelMate C303XMi
$2,299

Intel® Pentium® M Processor 735
(1.70GHz, 2MB L2 cache, 400MHz FSB)
Microsoft® Windows® XP Tablet PC Edition
1GB DDR333 SDRAM, 80GB[1] hard drive
and DVD-Dual drive (DVD+/-RW).
(LX.T280E.122)

Acer TravelMate C302XCi
$1,899

Intel® Pentium® M Processor 1.60GHz
(1MB L2 cache, 400MHz FSB)
Microsoft® Windows® XP Tablet PC Edition
512MB DDR333 SDRAM, 60GB[1] hard drive
and CD-RW/DVD-ROM combo drive.
(LX.T280E.125)

Acer® TravelMate® C110
Compact, On-The-Go Tablet

You can use the innovative Acer TravelMate C110 like a clipboard by writing directly on the display with the included EMR pen or stylus. When you're ready to use the keyboard, just flip the display and you have a full-functioned notebook computer weighing just 3.2 pounds (without external drive). What could be more convenient?

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Tablet PC Edition
- 512MB DDR333 SDRAM
- 10.4" XGA (1024 x 768) TFT display
- Intel® Extreme Graphics 2
- 802.11b/g WLAN, Bluetooth™, 10/100 LAN, V.92 modem

Acer TravelMate C112TCi-G
$1,699

Intel® Pentium® M Processor 733
(1.10GHz, 2MB L2 cache, 400MHz FSB)
Microsoft® Windows® XP Tablet PC Edition
60GB[1] hard drive and external CD-RW/DVD-ROM combo drive.
(LX.T270E.236)

Acer TravelMate C112Ti-G
$1,499

Intel® Pentium® M Processor 733
(1.10GHz, 2MB L2 cache, 400MHz FSB)
Microsoft® Windows® XP Tablet PC Edition
and 40GB[1] hard drive. External optical drive optional.
(LX.T270E.235)

Acer 19.0" and 17.0" Flat Panel Displays

Complex spreadsheets, graphic design, CAD/CAE and videoconferencing are among the applications that call for a generously sized 19.0" LCD. Less scrolling and fewer keystrokes help workers be more productive.

Acer AL1931

- 19.0" TFT LCD
- 1280 x 1024 native resolution
- 700:1 contrast ratio
- 170° horizontal viewing angle
- 170° vertical viewing angle
- 2x 1.0W integrated speakers
- DVI and S-video
- Silver/black color

Acer AL1931
$639

Acer AL1912

- 19.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

Acer recommends Microsoft® Windows® XP Professional.

Acer® TravelMate® 3200

Dressed for Professional Success

This travel-friendly notebook in the elegant new Acer Folio design weighs in at a mere 4.5 pounds with its optical drive and battery installed but packs enough power and features to be your desktop-replacement system. Add the optional EasyPort Port Replicator and you can quickly connect/disconnect from your printer and other office tools.

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 60GB[1] hard drive
- CD-RW/DVD-ROM combo drive
- 3-in-1 card reader
- 14.1" XGA (1024 x 768) TFT display
- ATI® MOBILITY™ RADEON™ 9700 graphics, 64MB DDR
- 802.11b/g WLAN, Gigabit LAN, V.92 modem

Acer TravelMate 3201XCi-XPP

$1,499

Intel® Pentium® M Processor 715
(1.50GHz, 2MB L2 cache, 400MHz FSB)
Microsoft® Windows® XP Professional
(LX.T4806.040)

Acer® EasyPort

Acer EasyPort Port Replicator

$99

Compatible with the TravelMate 3200, 8000, 6000, 800, 660, C300 and C110.
(LC.DS201.001)

For the name of a reseller near you or further information, please call Acer or visit our Web site:

800-571-2237

www.acer.com/us

Whether creating spreadsheets, word processing or searching the Web, users will see sharp detail and vivid images on a 17.0" LCD. Ideal for businesses of all sizes.

- 140° horizontal viewing angle
- 140° vertical viewing angle
- Black color

Acer AL1912

$469

Acer AL1731

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 430:1 contrast ratio
- 160° horizontal viewing angle
- 130° vertical viewing angle
- 2x 1.0W integrated speakers
- DVI and S-video
- Silver/black color

Acer AL1731

$439

acer
Empowering People

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

acer

Acer® Aspire™ 1800
Desktop Power in Mobile Form Factor

Let the **Acer Aspire 1800** be your portable entertainment and creativity center. Play the latest games, watch your favorite movies, edit videos or use power-hungry productivity applications. You won't miss one show-stopping moment on the 17.0" wide-screen display, and thanks to the ATI® MOBILITY™ RADEON™ X600 chip, you'll experience new levels of graphics performance. Instead of being tied to your desk, enjoy the best in multimedia all around your home.

- Intel® Pentium® 4 Processor 530 with HT Technology (3.00GHz, 1MB L2 cache, 800MHz FSB)
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 80GB[1] hard drive
- Integrated Super Multi Write Plus (DVD –RW, +RW, -RAM) drive
- 5-in-1 card reader
- 17.0" WXGA (1280 x 800) TFT display
- ATI® MOBILITY™ RADEON™ X600 graphics, 64MB DDR
- 802.11b/g WLAN, Bluetooth™, Gigabit LAN, V.92 modem

Acer Aspire 1802WSMi
$1,699

ALL FEATURES LISTED.
(LX.A2906.001)

Acer® TravelMate® 2600
Performance Teamed with Practicality

Savvy users know that a wide-angle display can make work easier and enhance productivity. You'll see sharp text and crisp images on the **Acer TravelMate 2600**'s 15.4" wide-angle LCD and have the convenience of viewing spreadsheets side by side on a single screen. Combining practicality with first-class performance, the Acer TravelMate 2600 is an excellent choice for small/home offices and small-to-medium businesses as well as government/educational institutions.

- Intel® Pentium® 4 Processor 2.80GHz
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 40GB[1] hard drive
- Modular CD-RW/DVD-ROM combo drive
- 15.4" WXGA (1280 x 800) TFT display
- ATI® MOBILITY™ RADEON™ 9000 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 2601WLCi
$1,199

ALL FEATURES LISTED.
(LX.T5506.051)

Acer 17.0" Flat Panel Displays

Whether creating spreadsheets, word processing or searching the Web, users will see sharp detail and vivid images on a 17.0" LCD. Ideal for businesses of all sizes.

Acer AL1715

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 450:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- 2 x 1.0W integrated speakers
- Black or beige color

Acer AL1715
$385

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

Acer recommends Microsoft® Windows® XP Professional.

Acer® TravelMate® 4500
All-Around Business System

The **Acer TravelMate 4500** strikes the right balance between performance and mobility. Equipped with an Intel® Pentium® M Processor and dedicated ATI® graphics, it was designed to be a perfect mainstream corporate notebook. Although powerful and flexible enough to replace your desktop system, the Acer TravelMate 4500 is sufficiently compact to be your constant traveling companion.

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 40GB[1] hard drive
- Modular DVD-Dual drive (DVD+/-RW)
- 3-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display
- ATI® MOBILITY™ RADEON™ 9700 graphics, 64MB DDR
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 4501WLMi
$1,699

INTEL® PENTIUM® M PROCESSOR 715
(1.50GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
(LX.T5006.003)

Acer® TravelMate® 290E
Maximum Mobility, Affordable Price

The **Acer TravelMate 290E** is designed to deliver high performance in a portable package that's both appealing and affordable. This modular-design notebook with integrated wireless connectivity and 15.0" viewing area has the comprehensive feature set and flexibility needed for a busy lifestyle like yours.

- Intel® Celeron® M Processor 320 (1.30GHz, 512KB L2 cache, 400MHz FSB)
- Microsoft® Windows® XP Professional
- 256MB DDR266 SDRAM
- 40GB[1] hard drive
- Modular CD-RW/DVD-ROM combo drive
- 15.0" XGA (1024 x 768) TFT display
- Intel® 852GM chipset with integrated DVMT
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 292ELCi-XPP
$949

ALL FEATURES LISTED.
(LX.T4006.053)

Acer AL1714

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 350:1 contrast ratio
- 160° horizontal viewing angle
- 120° vertical viewing angle
- Black or beige color

Acer AL1714
$375

acer
Empowering People

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

acer

Acer® Veriton® 7600GT
Business Productivity Tool - Minitower

The **Acer Veriton 7600GT** minitower, with a deep-charcoal chassis, is a superb business productivity tool that includes a powerful processor, integrated graphics, management software and room for expansion. The one-touch recovery feature easily returns the PC to its original configuration.

- Intel® Pentium® 4 Processor with HT Technology or Intel® Pentium® 4 Processor
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 1.44MB[1] floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN

Acer Veriton 7600GT-U-P3201
$923

INTEL® PENTIUM® 4 PROCESSOR 540 WITH HT TECHNOLOGY
(3.20GHz, 1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
80GB[1] HARD DRIVE AND CD-RW DRIVE.

Acer Veriton 7600GT-U-N2800
$745

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
40GB[1] HARD DRIVE AND CD-ROM DRIVE.

Acer® Veriton® 5600GT
Business Productivity Tool - Standard Desktop

The **Acer Veriton 5600GT** standard desktop offers the ultimate balance between space-saving design and expandability, all in a handsome deep-charcoal chassis.

- Intel® Pentium® 4 Processor with HT Technology or Intel® Pentium® 4 Processor
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 1.44MB[1] floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN

Acer Veriton 5600GT-U-P3201
$923

INTEL® PENTIUM® 4 PROCESSOR 540 WITH HT TECHNOLOGY
(3.20GHz, 1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
80GB[1] HARD DRIVE AND CD-RW DRIVE.

Acer Veriton 5600GT-U-N2800
$745

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
40GB[1] HARD DRIVE AND CD-ROM DRIVE.

Acer 15.0" Flat Panel Displays

A 15.0" LCD is appropriate when both space and budget are limited. It's suitable for most business applications as well as home activities, such as Web surfing and e-mail.

Acer AL1512

- 15.0" TFT LCD
- 1024 x 768 native resolution
- 450:1 contrast ratio
- 120° horizontal viewing angle
- 110° vertical viewing angle
- 2 x 1.5W integrated speakers

Acer AL1512
$319

Acer AL1511

- 15.0" TFT LCD
- 1024 x 768 native resolution
- 350:1 contrast ratio

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

Acer recommends Microsoft® Windows® XP Professional.

Acer® Veriton® 3600GT

Business Productivity Tool - Compact Desktop

The compact form factor of the deep-charcoal **Acer Veriton 3600GT** makes it the perfect desktop solution when space is at a premium.

- Intel® Pentium® 4 Processor with HT Technology or Intel® Pentium® 4 Processor
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 1.44MB[1] floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN

Acer Veriton 3600GT-U-P3201

$923

INTEL® PENTIUM® 4 PROCESSOR 540 WITH HT TECHNOLOGY
(3.20GHz, 1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
80GB[1] HARD DRIVE AND CD-RW DRIVE.

Acer Veriton 3600GT-U-N2800

$745

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
40GB[1] HARD DRIVE AND CD-ROM DRIVE.

Acer® AcerPower™ F2

All-Around Budget Performer

Proven technology, high-level reliability and expansion options help to make the **AcerPower F2** minitower a sound investment for home, school or office needs.

- Intel® Pentium® 4 Processor or Intel® Celeron® D Processor
- Microsoft® Windows® XP Professional
- 256MB DDR SDRAM
- 40GB[1] hard drive
- CD-ROM drive
- 1.44MB[1] floppy drive
- Intel® Extreme Graphics 2
- 10/100 LAN

AcerPower F2-U-N2800

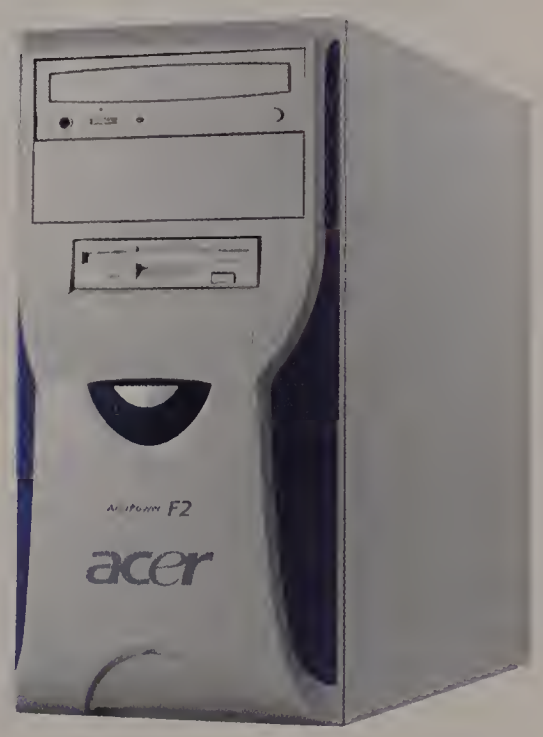
$591

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

AcerPower F2-U-C3000

$450

INTEL® CELERON® D PROCESSOR 330
(2.66GHz, 256K L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL



Acer 17.0" CRT Monitor

A dependable CRT monitor is a great value for education, small business and home use, providing crisp text and graphics.

- 140° horizontal viewing angle
- 125° vertical viewing angle
- Black or beige color

Acer AL1511

$279

Acer AC711

- 17.0" CRT
- 16.1" diagonal viewing area
- 1024 x 768 @ 85Hz recommended resolution
- 0.27mm dot pitch
- Black or beige color

Acer AC711

$109

acer
Empowering People

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

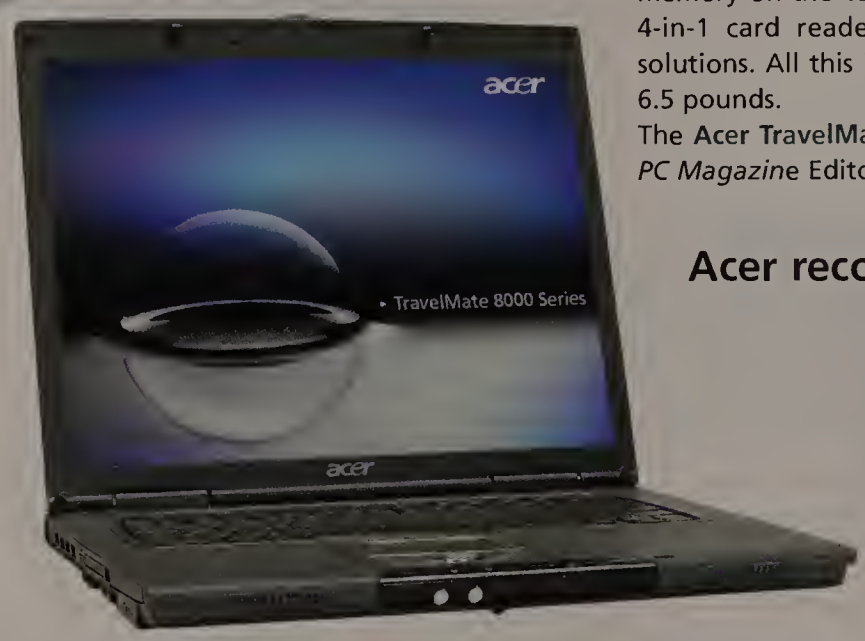
acer

Acer® TravelMate® 8000
Cutting-Edge Performance

intel inside centrino™ MOBILE TECHNOLOGY

The **Acer TravelMate 8000** incorporates the high-end features today's business pros demand, including **Intel® Centrino™ Mobile Technology** and the latest wireless connectivity. See stunning graphics with 128MB on-chip memory on the **15.0"** SXGA+ display. Use the integrated 4-in-1 card reader for your pick of optional storage solutions. All this in a notebook that weighs in at under 6.5 pounds.

The **Acer TravelMate 8000** is a winner of the prestigious *PC Magazine* Editors' Choice Award (May 10, 2004).



Acer recommends Microsoft® Windows® XP Professional.

- Intel® Centrino™ Mobile Technology
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- Modular Super Multi Write Plus (DVD-RW, +RW, -RAM) drive
- 4-in-1 card reader
- 15.0" SXGA+ (1400 x 1050) TFT display
- ATI® MOBILITY™ RADEON™ 9700 graphics, 128MB DDR
- 802.11b/g WLAN, Bluetooth™, Gigabit LAN, V.92 modem

Acer TravelMate 8006LMi
$2,699

INTEL® PENTIUM® M PROCESSOR 755
(2.00GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
AND 80GB[1] HARD DRIVE.
(LX.T4206.092)

Acer TravelMate 8003LMi-2MB
$1,999

INTEL® PENTIUM® M PROCESSOR 725
(1.60GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
AND 60GB[1] HARD DRIVE.
(LX.T4206.100)

Acer Notebook/Tablet Service Upgrades Protect Your Valuable Investment

Quality is built into every notebook and Tablet PC Acer makes, and each comes with a one-year standard limited warranty.[2] It includes 24/7 (excluding some holidays) hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. Extra protection is available with one of these upgrades:

It's a tough world out there, and accidents do happen--sticky spills, dangerous drops, nasty knocks--which is why you should consider the Total Protection Upgrade. It runs concurrently with the limited warranty and limited warranty extension and covers the cost of a replacement unit if your covered notebook cannot be repaired.

2-Year Extension of Limited Warranty (146.AB820.EX2)

$99

Prepays freight to and from Acer repair depot.
Excludes extension of International Traveler's Warranty.

2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002)

$199

Prepays freight to and from Acer repair depot.
Excludes Extension of International Traveler's Warranty.

---

[1] When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

[2] For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76S03.

For the name of a reseller near you or further information, please call Acer or visit our Web site:

800-571-2237

www.acer.com/us

© 2004 Acer America Corporation. Information and prices are subject to change without notice. Acer, TravelMate and Veriton are registered trademarks and AcerPower a trademark of Acer Inc. Aspire is a trademark of Acer America Corporation. Intel, Intel Centrino, Intel Inside, the Intel Centrino logo, the Intel Inside logo, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

139 VHS TO DVD: NO PC REQUIRED
142 HOME THEATER: SMALL PROJECTOR
144 GADGET FREAK: LO-FI WI-FI

The new world of personal tech—for the living room and beyond

NEXT GEAR

EDITED BY LAURIANNE McLAUGHLIN

VIDEO TO DVD, SANS PC

YOU CAN ARCHIVE OLD HOME MOVIES ONTO DVD WITHOUT EVER TOUCHING A PC. WE EXPLORE YOUR OPTIONS AND OFFER SOME TIPS ON DOING IT RIGHT. BY MICHAEL GOWAN

IN THE 25TH WEEK of my wife's pregnancy, she had an ultrasound taken at a facility where you can get a videotape of the event. If ever there was a visual that I wanted to last, this was it. But instead I had a tape. Videotape degrades with time. It wears down with each playback. So I needed to get this little keepsake onto DVD, preferably before the kid was ready to enter high school.

Because doing the job is easier than ever, now's the time to preserve VHS memories like this one—and everyday home movies of beach weekends, recitals, and parties—by converting them to DVD. Compared with tape, a DVD captures better picture and sound and does not degenerate in quality from repeated play. Plus, with a DVD, you can insert chapter marks to access a part of the story quickly. VHS-to-DVD conversion has been possible via the PC for a few years, but the latest DVD recorders offer a quick and convenient route to digital video.

I tried several options for transferring VHS tape to DVD without PC: a GoVideo all-in-one combination unit consisting of a DVD recorder and a VCR; a Sharp DVD recorder with a built-in hard drive; and YesVideo, a mail-in service that handles the conversion for you. My conclusion: In general, you can't beat DVD recorders for hassle-free ▶

PHOTOGRAPH: KEVIN CANDLAND

dubbing, but some units lack certain advanced video editing tools that PC products offer.

COPY THAT

NOW THAT PRICES have fallen to between $250 and $800, DVD recorders seem poised to replace VCRs. The basic method for transferring video from VHS to DVD using standard equipment isn't complicated. You connect an RCA cable from the VCR's video and audio outputs to the DVD recorder's inputs, press *Play* on the VCR, and press *Record* on the DVD recorder.

You don't need any additional gear such as a PC video capture card, because the DVD recorder has all the necessary capture and conversion features. Unfortunately there's no way to speed up this process: Every minute of tape takes a minute to record. And I had a hard time syncing the recording as closely as I wanted to, using the basic method. The devices I tried took from 2 to 10 seconds to start after I pressed the Record button, so timing required some finesse. Inevitably I cut off the beginning or got snow at the end.

A combo DVD recorder/VCR, such as GoVideo's $399 VR4940, solves that problem. Because both devices are integrated into a single box, dubbing becomes a simple two-click process: Press *Copy* on the remote control, and then confirm that you want to do it. This particular model will even stop recording when the videotape ends, if you haven't already pressed Stop. And you can copy video from DVD to VHS just as easily.

In addition to home movies, you may have a large library of commercially produced films sitting on the shelf. So why not turn your *Star Wars* VHS tape into a DVD, too? The copy-protection features on most VHS tapes prevent this. When you try to record a protected tape, you'll receive an error message and get a disc full of blue screen.

How easy is it to improve your movie? If you use a DVD-RW or DVD+RW disc, you'll be able to edit the material on the disc by using Video Recording mode; if you format a DVD-RW disc in VR mode, however, the disc will work only in a player that supports DVD-RW.

VR mode permits editing only in the most liberal sense of the word. Working with the GoVideo recorder's on-screen display and remote control, I was lucky to edit material within a second of what I wanted. By comparison, when you edit video on a PC, software allows you to trim scenes by a fraction of a second if you wish.

You may also want to break your disc into chapters, like those that you see on a rented DVD movie. With most units, you have the option to do this manually or to insert a chapter automatically every so often—say, every 10 minutes. You can change the order of scenes in VR mode by making a chapter playlist; this kind of editing function is far easier to do on a PC, though, because you drag and drop instead of fiddling with a display and a remote.

HARD-DRIVE OPTION

IF YOU'RE INTERESTED in doing a fair amount of editing instead of just making direct copies, consider purchasing a DVD recorder that has a built-in hard drive, such as Sharp's $800 DV-HR300U. With this kind of recorder, you transfer video from VHS to the hard drive before burning it to disc.

A COMBINATION DVD recorder/VCR, such as GoVideo's VR4940, works great for straight copies. But this model's software shows only text, not images, to mark DVD chapters.

HOW-TO

VIDEO-TO-DVD TRANSFER TIPS

FOLLOW THESE STRATEGIES to get the best results from your VHS-to-DVD conversion.

Use a good VCR: Your DVD can look only as good as the feed from the VHS player. There's nothing you can do to improve the quality of the VHS tape, but you can use a high-quality, four-head VCR. If you have an older model, upgrade, or borrow a better unit from a friend or a neighbor.

Adjust tracking first: Before pressing Record on the DVD player, make sure you've adjusted the tracking on the VCR. Doing so helps eliminate distortion. Many VCRs automatically calibrate the tracking when you play a videotape, so watch out for on-screen displays, which the DVD player will record.

Use Standard Play quality: If your goal is to preserve priceless memories, don't skimp on the recording quality in order to pack more video onto one disc. You can find DVD-R or DVD+R discs for just $2 if you shop around.

Use DVD-R or DVD+R format when possible: Most DVD players can read these discs. Not all players can read rewritable discs, especially if they've been formatted in VR mode.

Finalize the disc: If you don't finalize—an option usually available in the recorder's setup menu—when you've finished converting, the disc won't play in other DVD players.

PHOTOGRAPHS: KEVIN CANDLAND

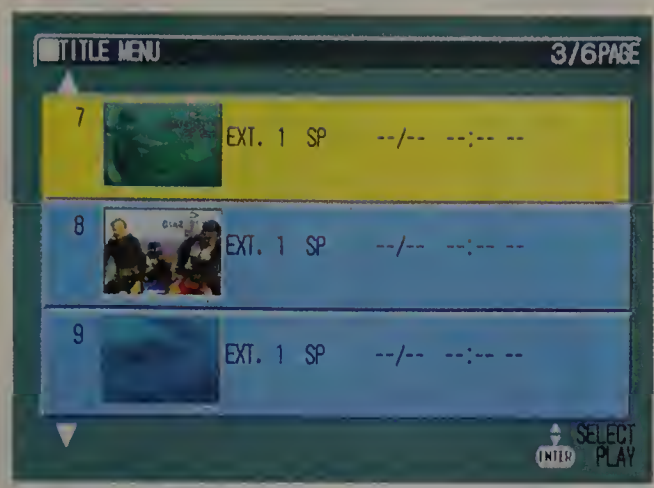
Using the Sharp DV-HR300U's 80GB hard drive, you can do the same kind of editing as in VR mode on a rewritable disc. But the main advantage here is that you can burn the result to a DVD-R or DVD+R disc; both are affordable, write-once formats that play in almost any current DVD player.

I ran into many of the same editing difficulties with the Sharp device as I had with GoVideo's; I had trouble controlling the timing, and using the remote control (rather than a mouse) wasn't easy at times.

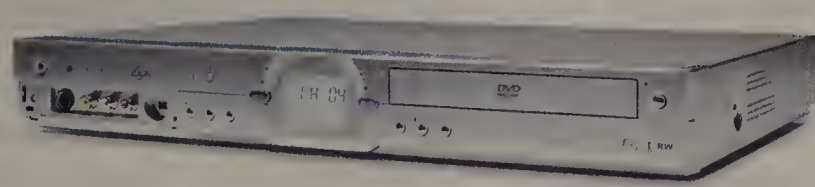
On the bright side, a hard-drive recorder makes creating multiple copies of a home movie a snap. As the eager grandparents-to-be clamored for copies of our ultrasound movie, I cued it up again from the hard drive instead of redubbing the entire thing.

The Sharp DV-HR300U offered significantly better menu options than GoVideo's unit did. Thanks to movies, we're accustomed to attractive visual menus on our DVDs, with thumbnail pictures that show the start of chapters. But on DVD-R videos that I created using GoVideo's recorder, the menus were text-only (though VR mode did allow thumbnails). The Sharp recorder created menus with thumbnails that I could easily select from any frame in the chapter; but the result did not look as polished as a professional DVD.

Speaking of polish, I had to choose a quality level to record at. Settings differed, but the main modes available were SP (Standard Play) and LP (Long Play); the Sharp unit offered several other choices as well.



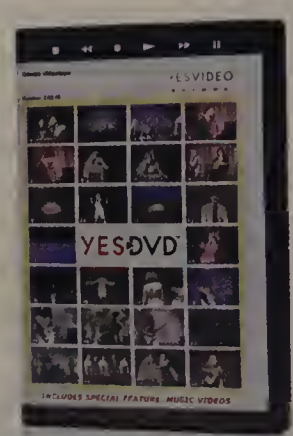
SHARP'S DV-HR300U recorder has a hard drive, which helps with editing. It also has a prettier menuing program than the GoVideo model and includes chapter images.



SP mode gave me about 2 hours of recording time; in LP mode, I could squeeze in 4 hours. When using DVD-R and DVD-RW discs, I could see the difference between the two speeds in copied home movies, but it wasn't glaring. Backgrounds seemed slightly rougher in LP mode, and facial features were less sharp. My goal was to preserve family events for posterity, though, so it wasn't worthwhile to pack in an extra 2 hours; instead, I just used another DVD-R disc. (I bought a five-pack for $10.)

MAIL IT IN

OF COURSE, YOU could pay someone else to do VHS conversion work for you. But the service doesn't always come cheap: One photo shop in Berkeley, California, offered to make me a DVD of a 1.5-hour VHS tape for $35, with no chapter stops. For any actual editing (including chapters), prices started at $75 an hour. A store located in San Francisco told me that it transfers tapes for $15 per hour, plus $2.50 per title or chapter insert. At those rates, you might as well buy your own recorder.



AN ATTRACTIVE case is another YesVideo benefit, but delivery takes a while.

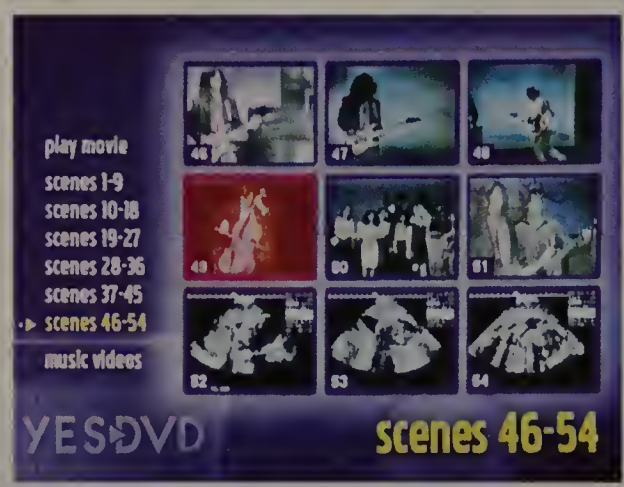
Mail-in services, however, offer a more affordable route. A company such as YesVideo (www.yes-video.com) will create a DVD copy of a VHS tape for just $25, including chapter stops. I sent in the ultrasound tape and some vacation travel footage to YesVideo. The video transferred to DVD sounded and looked as good as the source. And the company did a pretty good job of inserting chapters, too, although at the end of the disc the technician missed several obvious spots to put new chapters. The disc comes in a nice-looking package, with a case that displays a thumbnail from each chapter.

It's a straight copy, though. YesVideo doesn't edit out the bad parts, like interference, on the tape. And completing the job takes up to two weeks from the time you drop off the tape, whereas local stores perform conversions in a day or two.

YOUR BEST CHOICE

ALL IN ALL, which option will be smartest for you? If you have relatively few tapes that you want to convert, a service like YesVideo is the way to go. Just be sure to make a copy of your priceless movie before you send the original on its way. (If you don't have a second VCR, try to borrow one.)

If you expect to work with tapes often, you can't beat the convenience of a combination recorder like GoVideo's for producing straight copies of VHS movies. But if you need to perform basic editing and make multiple copies, moving up to a DVD recorder with a hard drive makes sense, especially if you also plan to use it to record TV shows.



YESVIDEO DOES the conversion work for you, with great results.

After the converting is done, you can relax and relive your favorite memories—without fear that they'll fade away.

Michael Gowan is a freelance writer in the Bay Area.

PROJECTOR

SCREENPLAY 4805 PACKS REAL VALUE

THE INFOCUS SCREENPLAY 4805 and the Optoma H30 Digital Cinema Projector were two of the most talked-about products at the 2004 Consumer Electronics Show in Las Vegas because of their combination of exceptional prices and power. Though each still shines brightly, the ScreenPlay 4805—reviewed here—may be the real star.

Both are DLP (Digital Light Processing by Texas Instruments) projectors priced under $1500: The Optoma H30 costs $1395 (list), while the InFocus 4805 is $1495.

The specs of the ScreenPlay projector roughly resemble the H30's: It has high-definition compatibility and 854 by 480 resolution (versus 800 by 600 for the H30). The InFocus puts out 750 ANSI lumens (versus 800 for the Optoma). I was greatly impressed by the rich color and smooth imaging from the ScreenPlay 4805—though out of the box, I found the default settings resulted in a slightly bluish cast in my test movies (very similar to the Optoma H30's imaging). But I easily adjusted the colors by using the on-screen menu.

ALL YOU NEED is a ScreenPlay: InFocus's home theater projector is an excellent entry-level unit.

Many of the InFocus's advantages over the Optoma are in its conveniences. For one, the 4805's menu is easier to understand. More important, it has a much better range of inputs on the back of the box than the H30 does. And the Optoma produced annoying light spillage about 3 feet above the video because of a too-short lens hood, but I had no such problem with the InFocus.

Working from my projection position of 8.3 feet from my screen, the 4805 produced a 66-inch diagonal image in 16:9 format. That's pretty good, but short of the 72 inches I get from my NEC LT240K projector, which costs about $1000 more.

This InFocus projector is boxy and gray. But it does its job exceptionally well and would be a great choice for anyone who wants a high-quality entry-level projector.

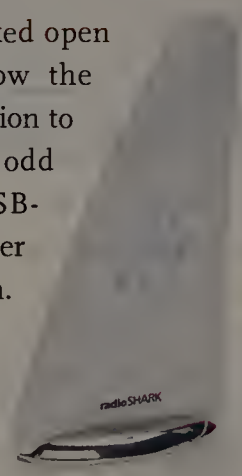
—Ramon G. McLeod

ScreenPlay 4805
InFocus
★★★★☆
Excellent imaging capabilities and well built. A terrific entry-level home theater projector.
List: $1495
find.pcworld.com/43428

RADIO RECEIVER

SAVE RADIO PROGRAMS ON YOUR PC

AS SOON AS I cracked open the box, I saw how the RadioShark (no relation to the store) got its odd name: The slim, USB-powered radio receiver looks like a dorsal fin. Designed to act as a radio recorder, this $69 unit proved to be easy to install and fun to use—with one significant limitation.



SLEEK SOUND: RadioShark records radio programming.

After installing the software that provides the radio-dial interface, I plugged the fin into one of my PC's free USB ports, and broadcast radio started playing through my machine's speakers. Once I had tuned the device to a radio station, I could save that setting as a preset.

Recording broadcasts to my hard disk was easy: I pressed the Record button, and the LED turned red to indicate that the RadioShark was at work capturing live audio. The recording can be saved in various formats, depending on your PC's audio drivers. I chose uncompressed WAV files to ensure the best sound quality.

The RadioShark's scheduling features make it easy to pause playback and then return to your PC later to continue listening from where you left off. However, you can't save the recording to the PC's hard drive. Rather than recording the audio that's in the RadioShark's memory buffer, the application records what's currently being played on the radio. Ideally, I would like to search through the time-shifted audio and select a portion to record and keep.

Still, the feature that lets you schedule recordings may come in handy, and it's possible to record shows as long as 2 hours. You can schedule recordings on a daily, weekly, or monthly basis.

I could integrate the songs and shows I'd recorded with Apple ITunes software. By dragging the recorded segments into the ITunes interface, I could add them to IPod playlists and listen anywhere.

Although RadioShark will please radio buffs, for the rest of us, its recording limitation makes it a dispensable toy.

—Chris Manners

RadioShark
Griffin Technology
★★½☆☆
Will please radio buffs, but its recording power needs more teeth.
List: $69
find.pcworld.com/43916

PHOTOGRAPHS: KEVIN CANDLAND

KVMs Perfected!

Control More Computers for Less Money, in Less Space and in Less Time with Tripp Lite KVM Switches

Tripp Lite KVM Switches offer the most economical and convenient solutions available for controlling up to 512 PCs or servers with a single keyboard/video/mouse console. Save money, space and time by eliminating unnecessary consoles, removing cable clutter and avoiding the need to move between multiple consoles.

16-Port 1U Rackmount

- All-in-one console KVM switch includes a keyboard, 15" LCD screen, touchpad and 16-port KVM switch in an easy-glide 1U rack drawer
- Built-in on-screen display gives you control over all ports
- Daisy-chain capability and two-level password security
- 2 models available (one features integrated console KVM switch as shown)

8-Port 1U Rackmount

- Slim 1U cabinet design with daisy-chain capability
- On-screen display gives you control over all ports

4-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready

2-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready
- Includes 2 cable kits

Tripp Lite KVM Switches— The Perfect Toy for Control Freaks!

FREE 4-Port KVM Switch!

Register online for a chance to win a FREE 4-port KVM switch.

Visit www.tripplite.com/promo/pcw

No purchase necessary. Some restrictions apply. See website for details.

TRIPP·LITE

1922 2002 80 years Manufacturing Excellence

ISO 9001 Certified Quality Systems

www.tripplite.com
1111 W. 35th Street
Chicago, IL 60609
(773) 869-1234

GADGET FREAK

DAN TYNAN

WHEN WI-FI WON'T FLY

IT ALL started with chickens.

We have six birds—three hens, two bantams, and one speckled rooster named Colorful. Mostly they stay in the coop, but every morning before dawn, Colorful escapes and patrols the neighborhood. I wanted to see how he was getting out (without crawling out of bed at 4 a.m.), so I decided to install a wireless Webcam in the coop and hook it up to my home network.

But before I could get Roostercam running, I needed to solve a few problems with my Wi-Fi net, namely interference and range. That proved harder than I thought.

CROWING PAINS

PROBLEM NUMBER ONE: interference. We love our cordless Plantronics phone, but every time it rings—such as when our neighbors call to report a loose rooster—our network crashes. Like 802.11g the phone wants the 2.4-GHz spectrum to itself. Our solution: a dual-band 2.4/5.8-GHz cordless, the Motorola MD751 (www.motorola.com). Since it's a digital cordless phone, it constantly changes frequencies to reduce interference. It's nifty, but at $90 it cost as much as my Wi-Fi gear. And unfortunately it doesn't fix interference caused by the Wi-Fi media servers, LCD TVs, MP3 radios, speakers, and headsets we have around the house, which interrupt one another like old married couples when we try to use them.

A solution may be out soon, thanks to Propagate Networks' AutoCell technology, which automatically switches channels and cranks down the power of a device's transmitter to keep RF waves from jostling each other. Netgear will introduce Wi-Fi equipment using AutoCell in the fall, with consumer electronics vendors close behind. I can't wait.

ROOSTER BOOSTER

OUR SECOND PROBLEM is that our Wi-Fi signal doesn't reach the chicken coop. Because I have a Linksys router, I decided to install a Linksys Wireless-G Range Expander ($80 to $100 street price; www.linksys.com), a sleek little box with a 5-inch antenna. Big mistake. I plugged it in and ran the setup CD. Not only did the extender not work, but it killed my cable Internet connection. (Turns out the Expander temporarily changed my network's IP address and then crashed before it could restore the old settings.)

After two excruciating tech support calls and a (probably unnecessary) trip to get a new cable modem, my network was back, but the Expander was still DOA. Another long call, with Linksys product manager Chris Chapman, uncovered the problem: I needed a firmware upgrade for my new Linksys router. At this point, a chicken dinner was starting to sound really good.

Downloading and installing a firmware upgrade solved the problem. But when I tried to install the Linksys Wireless-B Internet Video Camera ($180), I ran into similar snafus. After another painful support call and more futzing with IP settings, I had a working camera. Now all I needed was a 200-foot extension cord—the cam runs only on AC power.

I had other options. I could forgo Wi-Fi and install an X10 camera, or I could spring for a solar-powered Proxim Solacam (a steal at $2999; www.proxim.com). Instead the cam is on hold. Our neighbors will have to put up with Colorful a bit longer. And while I still love my Wi-Fi network, it's definitely not for the birds. ■

Contributing Editor Dan Tynan loves his farm-fresh eggs.

NEXT UP

Music Everywhere

SONOS'S DIGITAL Music System can't guarantee you'll feel like dancing, but it will spread digital music throughout your home. The $499 networked ZonePlayer distributes, plays, and amplifies music in a room or "zone" of the house, using your speakers and its own 50-watts-per-channel amp. It plays file formats like MP3 and WMA from your PC, Mac, or Network Attached Storage device, as well as music from Internet radio stations. Its companion, a sophisticated $399 wireless controller, lets you play music in any zone as you roam. www.sonos.com

–Laurianne McLaughlin

ILLUSTRATION: GORDON STUDER

We'll help you build your dream computer.
What you do with it is up to you.

Cube cases are all the rage nowadays. So surf in style with our infinitely configurable Aria. This dashing little number sports all kinds of features guaranteed to turn your friends sea-green with envy. Like a whisper-quiet 300-watt power supply. A multi format card reader for all your audio/photo/video applications. And unlike the other cubes, Aria can work with your choice of microATX motherboards and the latest accessories. To start building your dream computer, simply visit www.antec.com or your local Antec retailer.

Antec.
The Power of You

BEST BUY COMPUSA Fry's City J&R MICRO CENTER STAPLES amazon.com buy.com NEW EGG

Lab-tested rankings of the best in PCs, peripherals, and upgrade components

TOP 100

EDITED BY THE REVIEWS STAFF

INSIDE

146 MULTIFUNCTION PRINTERS
154 DESKTOP PCs
156 NOTEBOOK PCs
159 17-INCH LCD MONITORS
161 DVD DRIVES
163 DIGITAL CAMERAS
165 MORE REVIEWS

Spot LIGHT Multifunction printers vary widely in ability. The Canon MP390 (left) can fax in color. The Brother MFC-8840DN makes two-sided prints.

SPOTLIGHT: MULTIFUNCTION PRINTERS

Multitalented Office Machines

Whether in the office or at home, we can all benefit from a little extra space on our desks. A multifunction printer reduces the number of separate pieces of equipment you need within reach by performing several tasks in one spot, and it could cost less than buying multiple devices. But to help you make sure your investment isn't squandered, we tested both inkjet and laser MFPs on a variety of tasks. We measured how quickly the models made prints, copies, and scans, and we judged the output quality of each function.

The average price of inkjet MFPs we've tested has dropped roughly $50 over the past year. For this story we tested seven inkjet MFPs, ranging from $100 to $200, most of which printed about as fast as the average stand-alone inkjet printer. The MFPs' photo print quality, however, still lags behind that of recent stand-alone inkjets we've seen.

We also tested six laser MFPs that cost from $350 to $1730. (We've never tested this many laser MFPs at once.) We found that, on average, these models printed text faster than small-office monochrome laser printers do, and printed graphics at about the same ▶

PHOTOGRAPHS: MARC SIMON

Top 10 Monitors

Top 10 CHART Outstanding image quality and a unique control that allows you to choose the best settings depending on lighting conditions help the LG Electronics Flatron L1710SK earn a Best Buy.

159

Top 10 Digital Cameras

Top 10 CHART The silvery, 5-megapixel Canon PowerShot S60 includes numerous manual controls, delivers good battery life, and is easy to tote.

163

Top 15 Notebook PCs

Top 15 CHART Acer's racer-red Ferrari 3200 sped through our WorldBench 5 tests, but it wasn't the top performer.

156

INSIDE THE TOP 100

See find.pcworld.com/15720 for details on how we compile charts for the Top 100. *Freelance writer Carla Thornton, and* PC World *editors Richard Baguley, Laura Blackwell, Eric Butterfield, Tracey Capen, Kalpana Ettenson, Rebecca Freed, Melissa J. Perenson, Narasu Rebbapragada, Dan Sammer, and Alan Staffard contributed to the* Top 100 *section this month. Ulrike Diehlmann, Julio Giannobile, Elliott Kirschling, Jeff Kuta, Tony K. Leung, Thomas Luong, and William Wang of the PC World Test Center tested the products reviewed in this section, with logistical support provided by Julian Weatherby.*

speed. For both text and graphics, their print quality scores were about equal to those of small-office lasers.

Scanning speeds for inkjet and laser MFPs, however, were a mixed bag: While half of the MFPs on the chart scanned a photo at low resolution in roughly 17 seconds (about 1 second faster than the average for SOHO scanners), the remaining models took anywhere from 28 seconds to 40 seconds to perform the same task.

Our pick for the best inkjet was the Canon MultiPass MP390, which combines extensive features with fairly good performance. At $200, it incorporates a media card reader and a fax machine. It printed text and photographs well, and it's speedy enough for light use.

Among the laser MFPs, we liked the Brother MFC-8840DN the best. Though its speeds were about average compared with other lasers, it earned high marks in all of our output quality tests. The scan function was the only disappointment, due to its stripped-down features.

INKJET MFPs IN THE OFFICE

INKJET MFPs offer a lot of handy features, and they don't skimp on print speed. This group of inkjet MFPs printed

TOP 100 TEST Center

Multifunction Printers

THE PRINT SPEEDS of both inkjet and laser MFPs impressed us, but copy and scan speeds—as well as output quality—were mixed.

INKJET MULTIFUNCTION PRINTER	Street price (07/15/04) and features[1]	Performance[2]	Print/scan output quality[3]	Comments
Editor's PICK Canon MultiPass MP390 find.pcworld.com/43390	• $200 • USB 2.0 • Printing: 4800 by 1200 dpi • Scanning: 1200 by 2400 optical dpi, 48-bit	• Print speed: 5.3 ppm text, 0.9 ppm color graphics • Copy speed: 3.6 ppm • Scan time: 28 seconds	• Text: Very good • Color graphics: Good • Color photos: Very good • Color scans: Very good	Of the inkjet models, the MP390 made the sharpest copies. Can fax documents in color, includes a multiformat media card reader, and prints on legal-size paper. (★★★★½)
Dell All-in-One Photo Printer 922 find.pcworld.com/43388	• $119 • USB 2.0 • Printing: 4800 by 1200 dpi • Scanning: 600 by 2400 optical dpi, 24-bit	• Print speed: 7.5 ppm text, 1.0 ppm color graphics • Copy speed: 2.1 ppm • Scan time: 15 seconds	• Text: Good • Color graphics: Fair • Color photos: Good • Color scans: Poor	Fast scanning speeds, but poor color scan quality. Print quality overall was below average; printouts of line art looked unattractive. Maximum paper size is 8.5 by 19 inches. (★★★)
Epson Stylus CX6600 find.pcworld.com/43396	• $199 • USB 2.0 • Printing: 5760 by 1440 dpi • Scanning: 1200 by 2400 optical dpi, 48-bit	• Print speed: 4.7 ppm text, 1.4 ppm color graphics • Copy speed: 3.2 ppm • Scan time: 28 seconds	• Text: Good • Color graphics: Fair • Color photos: Good • Color scans: Outstanding	Made excellent scans of color photos; printouts of line art, however, were unappealing. Has a multiformat media card reader. (★★★½☆)
HP PSC 1315 All-in-One find.pcworld.com/43384	• $130 • USB 2.0 • Printing: 4800 by 1200 dpi • Scanning: 600 by 2400 optical dpi, 36-bit	• Print speed: 4.6 ppm text, 1.0 ppm color graphics • Copy speed: 0.5 ppm • Scan time: 37 seconds	• Text: Very good • Color graphics: Good • Color photos: Very good • Color scans: Good	Produced impressive prints overall and the best-looking monochrome scans from an inkjet, but copies were the least attractive. Prints on legal-size paper. (★★★)
Lexmark X5270 All-in-One find.pcworld.com/43386	• $130 • USB 2.0 • Printing: 4800 by 1200 dpi • Scanning: 600 by 2400 optical dpi, 24-bit	• Print speed: 7.7 ppm text, 1.0 ppm color graphics • Copy speed: 2.2 ppm • Scan time: 15 seconds	• Text: Good • Color graphics: Fair • Color photos: Good • Color scans: Very good	Fast at printing text and scanning, but prints of line art showed lots of banding. Prints banners up to 8.5 by 17 inches. (★★★☆☆)
LASER MULTIFUNCTION PRINTER				
Editor's PICK Brother MFC-8840DN find.pcworld.com/43382	• $650 • Ethernet, USB 2.0, and parallel • Printing: 2400 by 600 dpi • Scanning: 600 by 2400 optical dpi, 24-bit	• Print speed: 15.1 ppm text, 6.5 ppm grayscale graphics • Copy speed: 5.7 ppm • Scan time: 36 seconds	• Text: Outstanding • Grayscale graphics: Very good • Line art: Very good • Color scans: Very good	Produced the highest-quality prints overall, and printed quickly, though scanning speeds were slow. Duplexer included. (★★★★)
Dell Multifunction Laser Printer 1600n find.pcworld.com/43378	• $399 • Ethernet and USB 2.0 • Printing: 1200 by 1200 dpi • Scanning: 600 by 1200 optical dpi, 24-bit	• Print speed: 15.9 ppm text, 2.4 ppm grayscale graphics • Copy speed: 5.7 ppm • Scan time: 18 seconds	• Text: Outstanding • Grayscale graphics: Fair • Line art: Very good • Color scans: Fair	Printed text and scanned quickly, but scan and copy quality were lower than those of other, more expensive laser models. Can fax documents in color. (★★★☆☆)
HP LaserJet 3380 find.pcworld.com/43370	• $699 • Ethernet, USB 2.0, and parallel • Printing: 1200 by 1200 dpi • Scanning: 600 by 600 optical dpi, 24-bit	• Print speed: 16.4 ppm text, 3.1 ppm grayscale graphics • Copy speed: 4.7 ppm • Scan time: 40 seconds	• Text: Outstanding • Grayscale graphics: Fair • Line art: Good • Color scans: Very good	Color scans looked very attractive, though scanning speeds were slow; has a legal-size scan area. (★★★)
IBM Infoprint 1410 MFP find.pcworld.com/43372	• $1596 • Ethernet and USB 2.0 • Printing: 1200 by 1200 dpi • Scanning: 600 by 600 optical dpi, 24-bit	• Print speed: 16.8 ppm text, 8.5 ppm grayscale graphics • Copy speed: 5.9 ppm • Scan time: 18 seconds	• Text: Outstanding • Grayscale graphics: Good • Line art: Good • Color scans: Good	Nearly identical to the Lexmark X422: Fast at printing graphics, but scan quality is about average. Includes a duplexer and has a legal-size scan area. (★★★½☆)
Lexmark X422 MFP find.pcworld.com/43376	• $1479 • Ethernet and USB 2.0 • Printing: 1200 by 1200 dpi • Scanning: 600 by 600 optical dpi, 24-bit	• Print speed: 16.9 ppm text 8.0 ppm grayscale graphics • Copy speed: 6.0 ppm • Scan time: 19 seconds	• Text: Outstanding • Grayscale graphics: Good • Line art: Good • Color scans: Good	Fast scanning, copying, and graphics printing, much like the IBM 1410. Duplexer included; legal-size scan area. (★★★½)

FOOTNOTES: [1] Listed specs are the maximum enhanced printing resolution, the scanning resolution without software enhancements, and the maximum external bit depth for files exported by included software. [2] Listed copy speed is for a letter-size text document; listed scan time is for a 4-by-5-inch photo at 100 dpi. [3] Color graphics were printed at default settings on plain paper, color photos were printed at best settings on glossy paper, and grayscale graphics were printed at default settings on plain paper. **HOW WE TEST:** Go to find.pcworld.com/43854 for a full description of our test methodology. **CHART NOTES:** Data based on tests designed and conducted by the PC World Test Center. All rights reserved. All units have flatbed scanners. All laser multifunction printers have an automatic document feeder and print on legal-size paper. See find.pcworld.com/10860 for details on *PC World*'s Star Ratings. Visit find.pcworld.com/43852 for reviews of all products.

text at an average speed of 5.3 pages per minute, which is slightly faster than the average of 4.9 ppm for the inkjet printers we tested in the August issue. The speediest inkjet MFP, the Lexmark X5270 All-in-One, printed text at 7.7 ppm.

Although every inkjet MFP in our test group printed sharp text, even the best output wasn't as razor-sharp as that printed by the laser models. The Canon MP390 and the HP PSC 1315 All-in-One were the only inkjets to earn a Very Good score for their text quality and for glossy photos. The same two models also earned a Good mark for graphics quality on plain paper; most of the others received a Fair rating for their prints, which tended to have garish colors or to appear too dark for detail to show.

For our copying test we duplicated a text document. Most of the inkjet MFPs proved inferior to the laser models in this test; the Canon MP390 was the only inkjet whose score matched that of most of the laser MFPs, while some of the other inkjet units made copies that either had fuzzy text or looked too light.

Inkjet MFPs print color graphics just as fast as stand-alone inkjet printers do, at an average of 1.1 ppm, compared with the 1.2 ppm average of inkjet printers. The quickest inkjet MFP on the chart, the Epson Stylus CX6600, printed graphics at 1.4 ppm.

THE $130 LEXMARK X5270 ALL-IN-ONE produced attractive color scans, but was slow to make copies.

Making copies on an inkjet MFP isn't that quick; almost all of the models we tested took between 17 and 30 seconds to copy our one-page newsletter (versus 10 to 12 seconds for the laser MFPs). The HP PSC 1315 was the biggest disappointment, taking almost 2 minutes to make a copy that resembled an old mimeograph.

Unlike laser MFPs, inkjets tend not to have built-in faxes. The only exceptions were the Canon MP390 and the Brother MFC-3820CN; though we tested the latter, it didn't make the chart.

INKJET MFPs AND PHOTOS

INKJET MFPs tend to look more like photo printers with flatbed scanners grafted onto them than they do typical office workhorses. The Canon MP390 and the Epson CX6600 have multiformat media card readers; the HP PSC 1315 has a front-mounted USB port that can receive photos from PictBridge-compatible digital cameras. All three can print photos without going through a PC.

Stand-alone inkjets generally print photos very well, but you can't expect quite the same quality from an MFP. None of the inkjet MFPs earned our top score of Outstanding for their glossy photos, although the Canon MP390 and the HP PSC 1315 did earn Very Good ratings. By comparison, 6 of 16 recently tested general-purpose inkjet printers received a score of Outstanding for their color photos.

The software packages that come with inkjet MFPs tend to have more photo editing features than do the application bundles of their laser counterparts. The driver usually includes controls for adjusting color, brightness, and contrast. The Epson CX6600 has a particularly extensive software bundle that includes ArcSoft's Photo Impression 5 for image editing.

THE $199 EPSON CX6600 made great-looking scans, and has a media card reader.

PHOTOGRAPH: MARC SIMON

SCANNING AND WAITING

ALL OF THE INKJET MFPs we tested have a convenient one-touch scan button on their control panel, so you don't have to use your PC to initiate scans. The inkjet MFPs' average speed for previewing and then scanning a 4-by-5-inch photo at 100 dpi was about 26 seconds, versus 18 seconds for recently tested small-office scanners. Two of the inkjet MFPs, however, scanned more quickly than the average for small-office scanners. The Dell 922 turned in the fastest speed on this test, 15 seconds; but it also earned a Poor rating for its color scan quality. By contrast, the Lexmark X5270, though it turned in nearly the same time on that test, still earned a Very Good score for the quality of its color scans. The HP PSC 1315 took a very slow 37 seconds to scan a photo at 100 dpi, but it was the fastest MFP (including the laser models) in our 600-dpi scan test. Similarly, the Canon MP390 scanned at a roughly average speed in the 100 dpi test, but it was the second-fastest model at 600 dpi. (To see more detailed test results, go to find.pcworld.com/43852.)

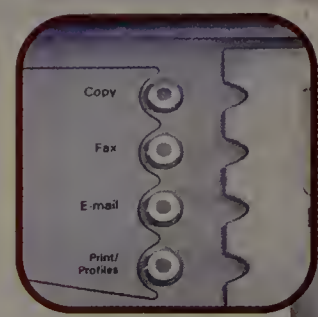
LASER MFPs: WORKPLACE WORKHORSES

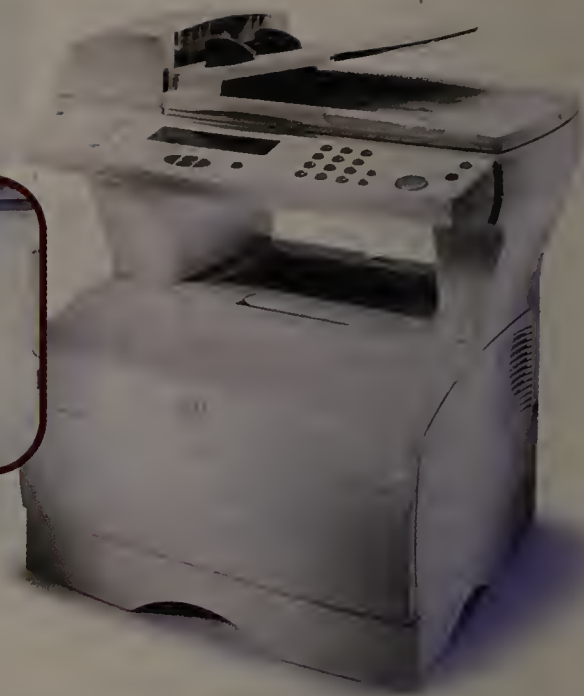
A LASER MFP is the better choice for a workgroup. For one thing, you can put the device on your network. For another, a laser MFP typically prints professional-quality text, and it does so much more ▶

quickly than an inkjet model does. (We have yet to see a multifunction laser that prints in color, however.) For this story, *PC World* pitted laser MFPs against one another for the first time, and overall these models held up well.

All but one of our test models printed text quickly—between 15 and 17 pages per minute—with sharp lettering even at very small sizes. Most of the lasers also did well with the narrow lines and intricate graphics of our line art document, something inkjets rarely do. The only laser MFP that disappointed us on these tests was the Sharp AL-1661CS, which missed the chart in part because of its slow text speed—just 11.8 ppm—and fuzzy lettering. One plus, however: The AL-1661CS produced the most attractive scans of all the laser models.

Unfortunately, our tests showed mixed results on grayscale graphics. Among the six laser models we reviewed, the Brother MFC-8840DN produced the best full-page grayscale graphics, with smooth transitions, good contrast, and fine details. At 6.5 ppm, though, the Brother was not the fastest unit at printing graphics; the IBM Infoprint 1410 MFP and Lexmark X422 MFP printed graphics at 8.5 and 8.0 ppm, respectively—but they also cost more than twice as much as the $650 Brother device. Of the laser units on the chart, the Dell Multifunction Laser Printer 1600n and the HP LaserJet 3380 earned the lowest scores for their graphics prints; the Dell's prints looked faded, with slight banding, while the HP's output appeared too dark, with exaggerated contrast. The Dell 1600n, while being the most affordable laser model we tested, also was the slowest MFP in this group at printing graphics, going at a poky 2.4 ppm.





THE $1596 IBM 1410 printed and scanned quickly, but it lacks a scan button.

COPY, YES; SCAN, MAYBE

MOST OF THE LASER MFPs we tested made copies of text that were quite sharp. The Brother MFC-8840DN won out again, with very accurate copies. On the other hand, the Dell 1600n's copies didn't look quite as sharp, resembling the ▶

MFP PROFILE

The Oddball Office Inkjet

THE HP OFFICEJET 9130 isn't a typical inkjet MFP: It's designed for office workgroups. At $999, it's by far the most expensive inkjet MFP we looked at, and it includes office-oriented features, such as a network adapter, an internal print server, automatic duplexing, 128MB of internal memory, and the ability to accept an optional paper tray (for a maximum of 650 sheets). It also offers a media card reader. Its most compelling feature, however, is a 3-by-8-inch pull-out QWERTY keyboard. With it you can type e-mail addresses and subject headers and send a document to an e-mail address without going through a PC. You can also enter speed-dial information quickly, rather than typing names on a cumbersome number pad.

But you pay a premium for color printing. At its price, you'd expect the Officejet 9130 to outperform inexpensive inkjet MFPs, and though it printed text at a respectable 5.4 pages per minute, it was slower than either the Dell 922 or the Lexmark X5270. It did, however, print color graphics faster than any inkjet MFP, at 2.2 ppm.

At 18 seconds for a text page, the 9130 made copies much faster than many other inkjet MFPs, but the $200 Canon MP390 and $100 Lexmark X2250 beat it. Scanning speed was the biggest letdown: The 9130 was the slowest inkjet MFP, taking 40 seconds to scan a 4-by-5-inch photo at 100 dpi. Two laser MFPs, though, were even slower: the Sharp AL-1661CS and the HP LaserJet 3380.

The HP Officejet 9130 had an edge over other inkjet MFPs on text quality, however. It printed sharp lines and clean type that even rivaled some lower-end lasers in quality. And while not stellar, its graphics prints showed realistic color as well as much fine detail.

If your cramped office needs a space-saving MFP, and if your work requires color prints, the Officejet 9130 is one of your only options. But the 9130 is slow on most functions. If you have the room and the budget, you may be better served by buying a laser MFP and putting an inkjet printer on your network for color printing.

THE HP 9130 has many office features, but isn't fast.

PHOTOGRAPHS: MARC SIMON

COMMITTED TO MEMORY

100% tested | guaranteed compatibility | free technical support | lifetime warranty

The Perfect Combination

Kingston memory for Dell systems, like peanut butter and jelly.

A mouth-watering idea—taking your Dell PC and making it even better with a memory upgrade from Kingston®. Kingston can enhance an already great product by giving it some added flavor boosters as Kingston is in the business of complimenting PCs. Not only is Kingston memory 100% compatible with your Dell PC, it can also help your system run faster and more efficiently.

Come and enjoy a winning combination as American as PB & J. For special offers on Kingston memory for Dell systems, please visit **shop.kingston.com/save25**

shop.kingston.com

Kingston® TECHNOLOGY

ISO 9001:2000 SGS

© 2004 Kingston Technology Company, Inc. 17600 Newhope Street, Fountain Valley, CA 92708 USA (714) 435-2600 Fax (714) 435-2699. All rights reserved. All trademarks and registered trademarks are the property of their respective owners.

copies of an inkjet MFP. Making a copy was quick and easy, however; every model performed the task in 13 seconds or less.

Though most laser MFPs have a one-touch scan button as the inkjet MFPs do, the IBM Infoprint 1410 and the Lexmark X422 don't, requiring you to scan documents through software on a PC. Still, all of the laser MFPs we tested allow you to scan to a variety of locations, such as an e-mail message, a file folder, or an OCR application. Though they print only in monochrome, laser MFPs do scan in color, and the color scans from our test models looked slightly better on average than scans from inkjet MFPs. But only one laser MFP received an Outstanding score for scan quality: the Sharp AL-1661CS, whose overall performance nevertheless kept it off the chart.

The scanning speeds of laser MFPs vary as widely as those of inkjet models. A few of the laser MFPs we tested scanned at roughly the average speed for small-office scanners. With a time of 18 seconds, the Dell 1600n was the quickest laser unit to scan a 4-by-5-inch color photo at 100 dpi; the slowest model, the Sharp AL-1661CS, took 40 seconds. The differences were similar at higher resolution: The Dell 1600n scanned a 2-by-2-inch color photo at 600 dpi in 26 seconds; the HP LaserJet 3380 took 1 minute, 47 seconds. (The IBM Infoprint 1410 and the Lexmark X422 can scan only up to 300 dpi in color, and so did not complete this test.)

THE $399 DELL 1600n made copies swiftly, though scan quality was low.

OFFICE FEATURES

LASER MULTIFUNCTIONS typically have fax capability, ethernet connections, and more memory than inkjet MFPs.

All of the laser MFPs we tested can send faxes, store a considerable list of speed-dial numbers, broadcast faxes to numerous numbers at once, poll other machines to automatically receive faxes, and track accounts with a billing number or PIN. Also, the Brother MFC-8840DN and the Dell 1600n can send color faxes.

THE BOTTOM LINE

FOR BUSY OFFICES, choosing a laser MFP over an inkjet model is a no-brainer, in part because of a laser's extensive paper-handling features. All the laser MFPs we tested had an automatic document feeder. The Brother MFC-8840DN, the IBM Infoprint 1410, and the Lexmark X422 include a duplexer for double-sided printing.

The real question is whether to spend the extra money on an expensive model that can handle high paper volumes. The $1596 IBM Infoprint 1410 and $1479 Lexmark X422 can be expanded to hold up to 850 sheets. If you don't plan to clear forests quite as fast, the $650 Brother MFC-8840DN can expand to hold 500 sheets.

Inkjet MFPs differ significantly in print and scan quality. But if those scores aren't enough to sway you, some have unique features to consider. For example, the Canon MP390 and Epson Stylus CX6600 have a media card reader. The Canon MP390 and the HP PSC 1315 can print onto legal-size paper, but only the Dell 922 and Lexmark X5270 can print on extra-long banner paper. And if you want to fax your documents in color, you have only one choice: the Canon MP390.

—*Lisa Cekan* ■

PHOTOGRAPH: MARC SIMON

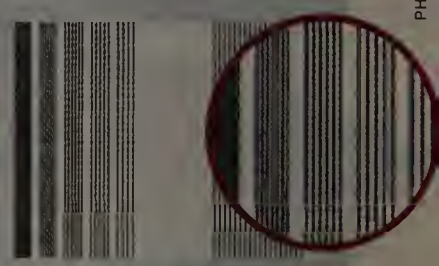
PRINT

Inkjet Multifunction Printers: Best and Worst Prints

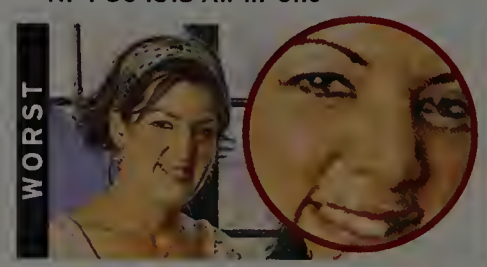
THOUGH NONE OF THE INKJET MFPs earned an Outstanding score for their glossy photos, a couple of models came close. One, the HP PSC 1315, got a Very Good rating, producing photos with realistic textures and natural-looking skin tones. Photo prints from the Lexmark X5270 earned a Good score. Though they had sharp details, textures were grainy and skin tones looked unnaturally yellow.

Because monochrome laser printers typically print sharp line art, we expected laser MFPs to do the same, which they did. Inkjet printers usually print sloppier lines, and so did the inkjet MFPs. A couple of laser MFPs earned a Very Good mark for their prints of line art, but none of the inkjet MFPs did. However, one inkjet MFP, the Canon MP390, received a Good for its line art. It printed fine lines with few blobs. Three models earned a Poor, including the Dell 922; its prints showed obvious banding, and parallel lines often overlapped.

HP PSC 1315 All-in-One



Canon MultiPass MP390



Lexmark X5270 All-In-One

Dell All-in-One 922

Got an Internet headache?

Better get EarthLink.®

Relief is just a call away...

Introducing stress-free Internet access. EarthLink's free suite of Blocker Tools provides instant relief from the Internet's biggest headaches. Plus, you can count on reliable connections, faster surfing, and expert help whenever you need it. And don't stress out about the price either: act now and get 6 months of EarthLink Dial-Up Internet service for half-price.* ***Ahhhhhhhh!***

Offer expires January 31, 2005. Offer for new subscribers only and cannot be redeemed in conjunction with any other offer. Offer is for dial-up only. *First six months at $10.97 per month, $21.95 per month thereafter. Service not available in all areas. Access fees, taxes, and other fees and restrictions may apply.

© 2004 EarthLink, Inc. EarthLink and the EarthLink logo are registered trademarks of EarthLink, Inc. Trademarks are property of their respective owners. All rights reserved. F195-4066P-PCW

Save 50% when you call today!*

1.866.477.9496

EarthLink *revolves around you*

TOP 15 DESKTOP PCs

	POWER SYSTEM	Overall rating	Street price (7/20/04)	WorldBench 5 performance score[1] (Faster)	Comments
1	Best BUY Dell Dimension 8400 NEW find.pcworld.com/43544	86	Average $2999[5]	Windows XP Home: Good 98	This PC's new Intel processor and chip set, top-performing graphics card, and attractive LCD monitor are a winning combination. (★★★★½)
2	Alienware Aurora Extreme find.pcworld.com/42162	84	Very expensive $4562	Windows XP Professional: Very good 109	Quick, gaming-centric, and very pricey; this Aurora's sci-fi-themed case is exotic without being horrendously gaudy. (★★★★ July 04)
3	Compaq Presario 8000Z find.pcworld.com/41740	83	Inexpensive $2154	Windows XP Professional: Good 98	The 8000Z sped through our tests, but the model we reviewed lacked open drive bays to boost storage. (★★★★☆ June 04)
4	Xi Computer MTower 64FX NEW find.pcworld.com/43534	83	Expensive $3636	Windows XP Home: Very good 103	This swift system comes with a great selection of software, has room for expansion, and offers wireless support. (★★★½)
5	Micro Express MicroFlex 34A find.pcworld.com/42574	83	Average $2699	Windows XP Home: Very good 104	A generally well-equipped system with USB 2.0 ports on the top of its chassis, it earned low scores for sound quality. (★★★★☆ Aug 04)
6	Sony VAIO PCV-RS630G NEW find.pcworld.com/43548	82	Inexpensive $2069	Windows XP Home: Fair 83	Though a bit sluggish in our performance tests, this PC has some nice features, such as the ability to record and play back TV. (★★★)
7	Velocity Micro Vision FX NEW find.pcworld.com/43536	82	Expensive $3745	Windows XP Professional: Very good 104	A computer that shines in every category, especially case design and documentation. It's a little expensive, though. (★★★★☆)

	VALUE SYSTEM	Overall rating	Street price (7/20/04)	WorldBench 5 performance score[1] (Faster)	Comments
1	Best BUY Dell Dimension 4700 NEW find.pcworld.com/43542	85	Average $1564[8]	Windows XP Home: Very good 83	This update of a previous Best Buy uses a new Intel chip set to provide better integrated graphics and sound. (★★★★)
2	Sony VAIO PCV-RS520 find.pcworld.com/42158	84	Expensive $1600	Windows XP Home: Very good 84	Stylish design and competitive performance are undermined by an inferior keyboard and tinny-sounding speakers. (★★★☆☆ July 04)
3	Dell Dimension 2400 find.pcworld.com/41174	84	Very inexpensive $699[9]	Windows XP Home: Fair 66	A large CRT monitor and a generous, home-oriented software bundle highlight this bargain system. (★★★ May 04)
4	Polywell Mini-Box 900VX NEW find.pcworld.com/43540	84	Average $1399	Windows XP Home: Outstanding 93	This small system offers good performance and plenty of ports, but it has extremely limited expansion options. (★★★½☆)
5	IBuyPower Back To School find.pcworld.com/42576	83	Expensive $1694	Windows XP Home: Outstanding 98	Though this machine performed well in our tests, its outlandish front panel might give even gamers pause. (★★★★ Aug 04)
6	Sys Technology Sys Performance 3200+/64 find.pcworld.com/42672	82	Expensive $1695	Windows XP Home: Very good 86	Nondescript black tower has a terrific software bundle and an attractive balance of features, speed, and price. (★★★★☆ Aug 04)
7	HP Compaq Business Desktop Dx2000 Microtower find.pcworld.com/42150	79	Inexpensive $1198	Windows XP Professional: Good 75	No-frills, attractively priced business system performs sufficiently well for light to moderate duties. (★★★ July 04)
8	Amax Max 3000+ find.pcworld.com/43228	77	Average $1389	Windows XP Home: Very good 81	Model works as a low-profile desktop or thin tower; silver-gray design fits nicely in most business or home settings. (★★★☆☆ Sept 04)

Go to find.pcworld.com/10860 for details on *PC World*'s Star Ratings.

Go to find.pcworld.com/39209 for details about the weightings we give to the various factors that contribute to a desktop PC's overall rating in each of the two categories.

[1] Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. See find.pcworld.com/15720 for more details.

[2] Total capacity in gigabytes (may represent multiple drives).

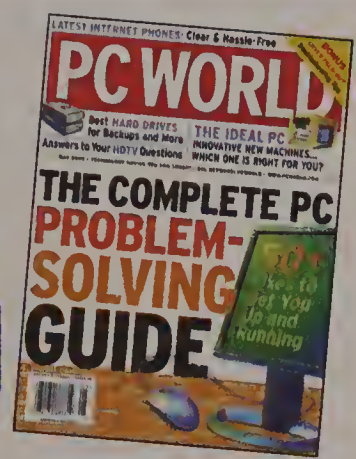
[3] Vertical cases are towers (over 20 inches), midsize towers (15.5 to 20 inches), or minitowers (under 15.5 inches). Compacts are small-footprint or thin horizontal cases.

NEW DESKTOPS FROM DELL take the top spots in both the power and value sections of our chart this month. The Dimension 8400 earns the power Best Buy, thanks to strong components that provide plenty of performance in both games and business software. It's the first system we've tested that uses the new Intel 925X chip set, which supports fast 533-MHz DDR2 memory. The chip set also supports the new PCI Express graphics card socket, and our test computer came equipped with a high-end PCI Express ATI Radeon X800 XT board.

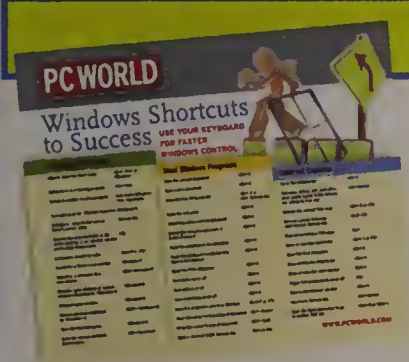
Our top value PC, the Dimension 4700, uses another new chip set from Intel (the 915G), but with more-common DDR400 memory. Like many other value PCs, the 4700 uses the chip set to process graphics. Though the 4700 produced reasonable frame rates in our tests, its scores were significantly lower than those of similarly priced systems that rely on dedicated

PHOTOGRAPH: RICK RIZNER

76% OFF!



Plus, get your FREE GIFT!



The PC WORLD Windows Tips Mouse Pad is loaded with great tricks, tips and shortcuts.
And it's yours absolutely FREE with your order of PC WORLD!

☑ **YES!** Rush me one year of PC WORLD and my FREE Windows Tips Mouse Pad! I'll pay just $19.97 for 12 monthly issues, that's 76% off the annual newsstand rate.

Name _____

Address _____

City _____ State _____ Zip _____

EMAIL (OPTIONAL) _____

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

Offer valid in the U.S. only. In Canada, add $12 USD for postage. All other countries send $49.97 to PC World PO Box 37560 Boone, IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4AN2B971

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558

Visit find.pcworld.com/43882 for reviews of all products tested this month and ranked in this chart.

CPU	RAM (MB/ type)	Hard drive [2]	Monitor	Graphics	Case type [3]	Optical drives	Other features [4]	Graphics quality	Setup and ease of use	Vendor's reliability/ service
3.6-GHz Pentium 4	1024/ DDR2-533 SDRAM	320 (RAID)	19-inch LCD	256MB ATI Radeon X800 XT	Midsize tower	12X DVD+RW and 48X CD-RW drives	Gigabit network adapter, Dell 565D speakers, Microsoft Works Suite 2004	Very good	Good	Good/Fair
2.4-GHz Athlon 64 FX-53	1024/ DDR400 SDRAM	398 (148GB RAID)	22-inch CRT	256MB ATI Radeon 9800 XT	Tower	8X DVD±RW and 48X CD-RW drives	Media-card reader,[6] Logitech Z-680 speakers, Microsoft Works Suite 2004	Very good	Very good	[7]/[7]
2.2-GHz Athlon 64 3400+	1024/ DDR400 SDRAM	160 (RAID)	17-inch LCD	256MB ATI Radeon 9600 Pro	Midsize tower	8X DVD+RW and 48X CD-RW drives	Altec Lansing 221 speakers, Microsoft Works 7, Money 2004, MSN Encarta Plus	Very good	Good	Fair/Poor
2.4-GHz Athlon 64 3800+	1024/ DDR400 SDRAM	148 (RAID)	19-inch LCD	256MB Asus V9980 NVidia FX 5950U	Midsize tower	12X DVD±RW and 16X DVD-ROM drives	Gigabit network adapter, 802.11g wireless adapter, Logitech X-620 6.1 speakers, WordPerfect 11 Productivity Pack, Arcsoft Digital Xpressions, no modem	Very good	Good	[7]/[7]
2.2-GHz Athlon 64 3400+	1024/ DDR400 SDRAM	250	19-inch LCD	256MB ATI Radeon 9800 XT	Midsize tower	8X DVD±RW drive	Media-card reader,[6] gigabit network adapter, Klipsch Promedia Ultra 5.1 speakers, no modem	Outstanding	Good	[7]/[7]
3.2-GHz Pentium 4	512/ DDR400 SDRAM	250	17-inch LCD	128MB ATI Radeon 9200	Midsize tower	8X DVD±RW and 16X DVD-ROM drives	Media-card reader,[6] Sony Active speakers, Quicken 2004, Microsoft Works 7, Click to DVD, TV-tuner card with DVR software	Very good	Fair	Good/Fair
2.4-GHz Athlon 64 FX-53	1024/ DDR400 SDRAM	194 (74GB RAID)	19-inch CRT	256MB GeForce 6800 Ultra APG	Midsize tower	12X DVD±RW and 52X CD-RW drives	Gigabit network adapter, Creative T7700 speakers, Corel WordPerfect Productivity Pack, no modem	Outstanding	Very good	[7]/[7]

CPU	RAM (MB/ type)	Hard drive [2]	Monitor	Graphics	Case type [3]	Optical drives	Other features [4]	Graphics quality	Setup and ease of use	Vendor's reliability/ service
3-GHz Pentium 4	512/ DDR400 SDRAM	160	17-inch LCD	Integrated Intel Media Accelerator 900	Minitower	16X DVD-ROM and 48X CD-RW drives	Dell ADA-425 speakers, Microsoft Works 2004	Good	Good	Good/Fair
3-GHz Pentium 4	512/ DDR333 SDRAM	160	17-inch LCD	128MB ATI Radeon 9200	Midsize tower	8X DVD±RW and 16X DVD-ROM drives	Media-card reader,[6] Microsoft Works 7, Sony PictureGear Studio, Quicken 2004 New User Edition	Good	Fair	Good/Fair
2.67-GHz Pentium 4	256/ DDR333 SDRAM	80	19-inch CRT	Integrated Intel 845GL graphics using main memory	Minitower	16X DVD-ROM and 48X CD-RW drives	Dell A425 speakers, Microsoft Works Suite 2003, Sonic MyDVD, Britannica 2003, Quicken 2002, Jasc Paint Shop Pro 8	Poor	Very good	Good/Fair
2-GHz Athlon 64 3000+	512/ DDR400 SDRAM	160 (RAID)	19-inch CRT	128MB ChainTech SA5900X	Compact	12X DVD±RW drive	Media-card reader,[6] Aopen MS805-8 speakers, no modem	Outstanding	Good	[7]/[7]
2.2-GHz Athlon 64 3400+	512/ DDR400 SDRAM	80	19-inch CRT	256MB ATI Radeon 9800 XT	Midsize tower	8X DVD±RW drive	Media-card reader,[6] Logitech Z-640 speakers, no modem	Very good	Very good	[7]/[7]
2-GHz Athlon 64 3200+	512/ DDR400 SDRAM	120	17-inch LCD	128MB PNY FX5900SE	Midsize tower	8X DVD±RW drive	Media-card reader,[6] gigabit network adapter, Altec Lansing 251 speakers, Corel WordPerfect Productivity Pack, Ulead PhotoImpact, no modem	Outstanding	Good	[7]/[7]
3-GHz Pentium 4	256/ DDR400 SDRAM	40	15-inch LCD	Integrated Intel 3D Extreme graphics using main memory	Minitower	16X DVD-ROM/48X CD-RW combo drive	JBL Platinum speakers, Microsoft Works 7, Dantz Retrospect Express Backup 6.5, no modem	Fair	Good	Fair/Fair
2.167-GHz Athlon XP 3000+	512/ DDR400 SDRAM	120	17-inch LCD	Integrated NVidia GeForce4 MX graphics using main memory	Compact	16X DVD-ROM/52X CD-RW combo drive	Media-card reader,[6] Microsoft Works Suite 2004	Fair	Good	[7]/[7]

[4] Unless otherwise stated, systems come with a modem and a 10/100 network adapter.

[5] Use Dell Value Code 6V411-84DREV to get this price.

[6] Includes support for some combination of CompactFlash I/II, Memory Stick, Memory Stick Pro, MultiMediaCard, Secure Digital Card, SmartMedia, and XD-Picture Card.

[7] Insufficient data to give a rating.

[8] Use Dell Value Code 6V411-47DREV to get this price.

[9] Use Dell Value Code 6V411- D24REV to get this price.

graphics (such as the Polywell Mini-Box 900VX, another newcomer this month).

New power PCs from Xi and Velocity Micro made the chart; the Xi MTower 64FX came with an 802.11g PCI wireless adapter and gigabit ethernet. The Velocity Micro system had the same tidy interior we've seen previously from the company.

Several systems that we tested this month didn't make the chart: At $2069, Sony's VAIO PCV-RS630G (find.pcworld.com/43548) is nicely priced for a 3.2-GHz Pentium 4 machine, but it turned in a disappointing WorldBench 5 score of 83. IBuyPower's Gamer-EX PC (find.pcworld.com/43546) had much stronger performance (with a WorldBench 5 score of 92), but its audio was subpar; a flat-sounding two-channel speaker system isn't what you'd expect from a gaming rig. ■

THE DELL DIMENSION 8400 sports a zippy new 3.6-GHz Intel Pentium 4 CPU and 925X chip set.

COMPUTER SCREEN GRAPHICS: JOHN GODDARD

TOP 15 NOTEBOOK PCs

	DESKTOP REPLACEMENT	Overall rating	Street price (7/16/04)	WorldBench 5 performance score[1] (Faster)	Comments
1	Best BUY HP Compaq Nc6000 find.pcworld.com/41093	82	Average $2021	Windows XP Professional: Very good 74	Lightweight corporate notebook comes with dual wireless capabilities and great battery life. (★★★★☆ May 04)
2	Gateway M405CS find.pcworld.com/42184	80	Inexpensive $1333	Windows XP Home: Good 69	Model performs well and has a low price. Order it with the lithium ion battery (as we did) to get the battery life we saw in our tests. (★★★½ July 04)
3	Dell Inspiron 9100 NEW find.pcworld.com/43352	78	Expensive $2330	Windows XP Home: Very good 81	This thick desktop replacement has a DVI port and dual pointing devices; built-in speakers and a subwoofer put out loud, rich sound. (★★★★☆)
4	Acer Aspire AS2003LMi find.pcworld.com/40448	78	Inexpensive $1599	Windows XP Professional: Very good 75	Very good performer offers an alluring wide-aspect 15.4-inch screen, but sound is only so-so. (★★★★ Apr 04)
5	Dell Inspiron 5150 find.pcworld.com/41147	78	Average $1751	Windows XP Home: Good 71	This notebook has a high-resolution screen. It's hefty, however, and you can't remove its optical drive to swap in a second battery. (★★★☆☆ May 04)

	ALL-PURPOSE NOTEBOOK	Overall rating	Street price (7/16/04)	WorldBench 5 performance score[1] (Faster)	Comments
1	Best BUY IBM ThinkPad R51 find.pcworld.com/43118	82	Inexpensive $1699	Windows XP Professional: Good 67	Slim R51 suits users who care more about mainstream features than bells and whistles. Excellent keyboard. (★★★★½ Sept 04)
2	IBM ThinkPad T42 find.pcworld.com/43080	81	Expensive $2299	Windows XP Professional: Very good 83	IBM pays great attention to detail in this impressive business notebook, which has terrific speed and an outstanding keyboard. (★★★★☆ Sept 04)
3	Toshiba Tecra M2V-S310 find.pcworld.com/42558	79	Inexpensive $1499	Windows XP Professional: Fair 61	Lightweight business notebook offers good battery life and storage expansion. At this price, model includes just 256MB of RAM. (★★★ Aug 04)
4	Chem USA ChemBook 2056 find.pcworld.com/42910	78	Average $1999	Windows XP Home: Very good 83	Strong performance and long battery life distinguish this unit. The optical drive is mounted on the front for easy access. (★★★☆☆ Sept 04)
5	Acer Ferrari 3200 NEW find.pcworld.com/43364	78	Average $1999	Windows XP Professional: Very good 77	This nicely equipped Ferrari-red notebook features a slot-fed DVD burner and a plethora of ports. (★★★★)

	ULTRAPORTABLE	Overall rating	Street price (7/16/04)	WorldBench 5 performance score[1] (Faster)	Comments
1	Best BUY IBM ThinkPad X40 find.pcworld.com/43066	75	Expensive $2299	Windows XP Professional: Fair 55	Ultraportable ThinkPad boasts the finest keyboard for its size. Optical drive is USB- or dock-based. (★★★★☆ Sept 04)
2	Toshiba Portégé M205-S810 find.pcworld.com/43120	75	Expensive $2399	Windows XP Tablet Edition: Good 64	This stylish convertible tablet/notebook handles both jobs adequately. It has good battery life and is very responsive to screen taps. (★★★½ Sept 04)
3	Sony VAIO PCG-TR3AP3 find.pcworld.com/42188	74	Expensive $2200	Windows XP Professional: Fair 52	The VGA camera mounted on this unit's small, easy-to-read screen supports video and stills. The tinny speakers are a drawback. (★★★½☆ July 04)
4	JVC Mobile Mini Note PC MP-XV841US find.pcworld.com/43084	72	Expensive $2300	Windows XP Professional: Fair 52	Well-equipped ultraportable boasts an integrated DVD burner and a wide-format screen. Includes Pinnacle Studio 9 SE. (★★★ Sept 04)
5	HP Compaq Tablet PC Tc1100 find.pcworld.com/43076	71	Expensive $2299	Windows XP Tablet Edition: Fair 53	This tablet PC converts into a smoothly working notebook with a keyboard addition. Screen taps require more force than we'd like. (★★½☆☆ Sept 04)

Go to find.pcworld.com/10860 for details on *PC World*'s Star Ratings. Go to find.pcworld.com/40049 for a breakdown of the weightings we give to the various factors that contribute to a notebook's overall rating in each of the three categories.

[1] See "Your Guide to the Top 100" at find.pcworld.com/15720 for more details.
[2] Except where noted, all Intel CPUs are SpeedStep chips, which run at a slower speed on battery power. (We performance-test all notebooks plugged in.)
[3] Features listings are not exhaustive.
[4] Unless otherwise noted, all notebooks come with a lithium ion battery.
[5] Includes computer, AC adapter, power cord, optical drive, and floppy drive (if offered).

HERE'S A NOTEBOOK THAT DOES JUSTICE to DVD soundtracks and multimedia presentations: Dell's wide-screen Inspiron 9100—with internal stereo speakers, a built-in subwoofer, and an extra-thick case that improves acoustics—produces the loudest, deepest sound we've ever heard from a notebook. Debuting at number three on the desktop replacement portion of our chart, this portable is one of the first that can be ordered with a 100GB internal hard drive.

The $1999 Acer Ferrari 3200—with a daring red chassis, a slot-fed DVD burner, and all-around good performance—just squeaked past some lower-priced

PHOTOGRAPH: RICK RIZNER

Visit find.pcworld.com/43590 for reviews of all products tested this month and ranked in this chart.

	CPU [2]	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features [3]	Overall design	Battery life (hours:min) [4]	Average weight (pounds) [5]	Vendor's reliability/ service
	1.6-GHz Pentium M	14.1	512	60	Touchpad, eraserhead	One multipurpose bay with DVD-ROM and CD-RW combo drive	802.11a/g, Bluetooth, gigabit ethernet, SD Card slot, embedded security chip	Very good	Outstanding/ 6:23	Light/ 6.6	Fair/Fair
	1.5-GHz Pentium M	15.0	512	40	Touchpad	Fixed DVD-ROM and CD-RW combo drive	802.11g, Microsoft Works 7	Good	Very good/ 5:15	Average/ 7.1	Good/Good
	3.2-GHz Pentium 4 [6]	15.4	512	60	Touchpad, eraserhead	One multipurpose bay with DVD+R/RW drive	802.11a/g, Bluetooth, DVI	Outstanding	Limited/ 1:26	Very heavy/ 11.5	Good/Fair
	1.6-GHz Pentium M	15.4	512	60	Touchpad	Fixed DVD-ROM and CD-RW combo drive	802.11b, three-in-one media card reader	Good	Very good/ 4:33	Average/ 8.1	[7]/[7]
	3.1-GHz Mobile Pentium 4	15.0	512	60	Touchpad	Fixed DVD+R/RW drive	802.11g	Good	Good/ 4:02	Very heavy/ 10.3	Good/Fair

	CPU	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features [3]	Overall design	Battery life (hours:min) [4]	Average weight (pounds) [5]	Vendor's reliability/ service
	1.5-GHz Pentium M	15.0	512	40	Touchpad, eraserhead	One multipurpose bay with DVD-ROM and CD-RW combo drive	802.11g, gigabit ethernet	Outstanding	Good/ 3:54	Average/ 7.4	Good/Good
	1.7-GHz Pentium M	15.1	512	40	Touchpad, eraserhead	One multipurpose bay with DVD-ROM and CD-RW combo drive	802.11g, gigabit ethernet	Very good	Good/ 4:09	Average/ 6.9	Good/Good
	1.5-GHz Pentium M	14.1	256	40	Touchpad	One multipurpose bay with DVD-ROM and CD-RW combo drive	802.11g	Good	Good/ 4:02	Light/ 5.7	Good/Fair
	1.7-GHz Pentium M	15.0	1024	60	Touchpad	One multipurpose bay with DVD±RW drive	802.11g, SD Card slot	Good	Good/ 4:07	Average/ 7.3	[7]/[7]
	1.8-GHz Low-power Mobile Athlon 64 2800+	15.0	512	80	Touchpad	Fixed DVD±RW drive	802.11g, Bluetooth, gigabit ethernet, four-in-one media card reader	Very good	Fair/ 2:37	Average/ 8.0	[7]/[7]

	CPU [2]	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features [3]	Overall design	Battery life (hours:min) [4]	Average weight (pounds) [5]	Vendor's reliability/ service
	1.2-GHz LV Pentium M	12.1	512	40	Eraserhead	External DVD-ROM and CD-RW combo drive	802.11g, Bluetooth, SD Card slot	Good	Fair/ 2:36	Light/ 5.6	Good/Good
	1.5-GHz Pentium M	12.1	512	60	Touchpad	External DVD-ROM and CD-RW combo drive	802.11g, Bluetooth, SD Card slot	Fair	Good/ 3:20	Average/ 7.1	Good/Fair
	1-GHz ULV Pentium M	10.6	1024	40	Touchpad	Fixed DVD-ROM and CD-RW combo drive	802.11g, Memory Stick slot, integrated VGA camera	Good	Good/ 3:20	Very light/ 4.0	Good/Poor
	1-GHz ULV Pentium M	8.9	256	40	Eraserhead	Fixed DVD-RW/-RAM drive	802.11g, SD Card slot	Fair	Very good/ 4:47	Very light/ 3.9	[7]/[7]
	1-GHz ULV Pentium M	10.4	512	40	Eraserhead	External DVD-ROM and CD-RW combo drive	802.11g, Bluetooth, SD Card slot	Good	Good/ 3:15	Average/ 7.1	Fair/Fair

[6] Single-speed desktop CPU.
[7] Insufficient data to give a rating.

models to nab the number five slot on the all-purpose notebooks list.

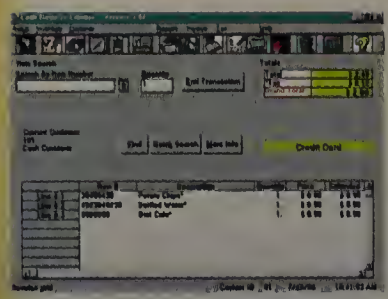
Four other newcomers failed to make our chart. The stylish Asus W1N came with sharp edges and mediocre stereo speakers. Sony's VAIO VGN-A190 entertainment notebook with bundled external speakers proved difficult to set up as a video server (a touted feature). Fujitsu's thin and light LifeBook S7010 lacks a user-upgradable hard drive. And MPC's TransPort T2200 offers a biometric fingerprint reader but comes equipped with an uncomfortable keyboard. ■

THE EXTRA-THICK Dell Inspiron 9100 has great sound.

COMPUTER SCREEN GRAPHICS: JOHN GODDARD

Cash Register Express Software
for Windows...$495

Computerize any type of retail store using Cash Register Express for Windows. Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. Cash Register Express



has more than 250 of the most desired point of sale features to help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

More Software for Your Retail Store

- Video Express
- Salon Express
- Auto Express
- RestaurantPro Express
- Barcode Express
- Label Works
- Inventory Track Express
- Credit Card Software
- All Single or Multiuser

All PC America Software requires Microsoft Windows. The software was written in Visual Basic using Microsoft Access Files. The source code is available.

CASH REGISTER EXPRESS™

More Profit!

More Sales!

More Customers!

Save Time, Reduce Theft, Speed Checkout, Increase Accuracy, Reduce Costs, Make Better Business Decisions by computerizing your Retail Store.

SYSTEMS START AT $495.

Cash Drawers ~~$189*~~
MMF, Logic Controls, Indiana, APG

Programmable Keypads ~~$495*~~
Logic Controls, Cherry, Genovation

Credit Card Readers ~~$189*~~
Unitech, Mag-Tek

*All prices depend on make and model.

Barcode Scanners ~~$495*~~
Metrologic, Symbol, NJCR, Percon, PSC

Receipt Printers ~~$299*~~
Star, Ithaca, Citizen, Epson

Barcode Printers ~~$799*~~
Cognitive Solutions Barcode Blaste

Pole Displays ~~$289*~~
Logic Controls

Portable Data Collectors ~~$695*~~
American Microsystems AMS3000

Dealers Wanted!

Join our dealer program. It's **FREE**. It's the fastest way to make money...**AND** we make it **EASY**.

MORE INFO?

- Call Toll Free 1-800-722-6374
- www.pcamerica.com
- Fax on Demand *1-845-267-3551*

1-800-PC-AMERICA

Call Toll Free 1-800-722-6374
PH: *1-845-267-3500*
FX: *1-845-267-3550*

PC America
60 N. Harrison Ave.
Congers, NY 10920

VISA MasterCard

TOP 10 MONITORS

Visit find.pcworld.com/43872 for reviews of all products tested this month and ranked in this chart.

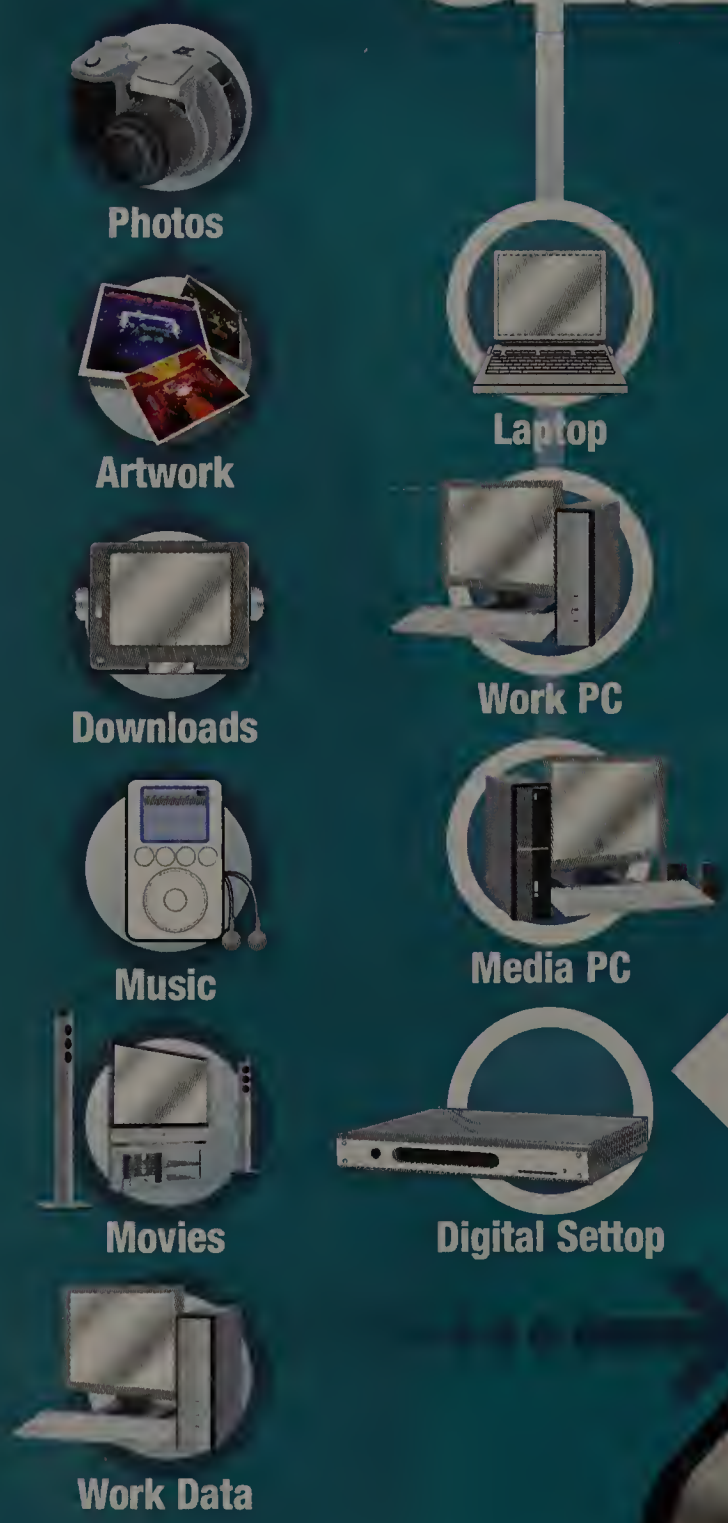
TWO NEWCOMERS displace the reigning Dell UltraSharp 1703FP. Propelled by excellent image quality and a very low price, LG Electronics' Flatron L1710SK vaults to the top of the chart, while the Sharp LL-172A-B's superb text reproduction earns it the second spot. ViewSonic's well-rounded VP171s takes fourth place with its blend of performance and adjustability. Sony's new SDM-HS74P wowed our panelists with the best graphics we've seen on a 17-inch monitor lately, but its high price kept it from climbing above number six. NEC's stylish MultiSync LCD1735NXM debuts at number seven.

	17-INCH LCD MONITOR	Street price (7/23/04)	Overall rating	Quality of text/ graphics	Comments
1	Best BUY LG Electronics Flatron L1710SK NEW find.pcworld.com/43420	$399	92	Outstanding/ Outstanding	**FEATURES:** 13.2 pounds; analog video input; tilt and swivel adjustments; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** Well-organized controls include Lightview button to let users choose the best settings for text, movie, or photo viewing by day or night. With the lowest price on the chart, this model is as easy on the wallet as it is on the eyes. (★★★½☆)
2	Best BUY Sharp LL-172A-B NEW find.pcworld.com/43422	$479	91	Outstanding/ Very good	**FEATURES:** 13.2 pounds; analog video input; tilt adjustment; built-in speakers; headphone jack; color- and image-adjusting software; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** Document and spreadsheet screens look remarkably crisp, earning this moderately priced unit the best text score of any monitor on the chart. (★★★★½)
3	Dell UltraSharp 1703FP find.pcworld.com/39407	$529	91	Very good/ Very good	**FEATURES:** 15.4 pounds; dual video inputs;[1] tilt, swivel, height, and pivot adjustments; optional speakers; headphone jack; four-port USB 2.0 hub; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** A smaller version of Dell's top-performing 19-incher, the 1703FP offers the same lithe design and great adjustment options. (★★★★☆ Mar 04)
4	ViewSonic VP171s NEW find.pcworld.com/43412	$549	89	Outstanding/ Outstanding	**FEATURES:** 14.3 pounds; dual video inputs;[1] tilt, swivel, height, and pivot adjustments; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** This great all-around performer offers several kinds of physical adjustments and serves up perfectly good text, but its screen's greatest strengths are its rich color and uniform brightness. (★★★½☆)
5	Samsung SyncMaster 173P find.pcworld.com/39383	$630	88	Very good/ Outstanding	**FEATURES:** 13.2 pounds; dual video inputs;[1] tilt, swivel, height, and pivot adjustments; color-adjusting software; TCO'03 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** The swank SyncMaster 173P's outstanding image quality (and good looks) are great for graphics and entertainment—but this model is also the most expensive on the chart. (★★★★☆ Mar 04)
6	Sony SDM-HS74P NEW find.pcworld.com/43408	$600	88	Outstanding/ Outstanding	**FEATURES:** 12.6 pounds; dual video inputs;[1] tilt adjustment; image-adjusting software; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** Dual-input monitor improves on its predecessor, the similar-looking but analog-only SDM-HS73P, by turning in the highest image-quality score we've seen in a 17-inch monitor recently. (★★★★☆)
7	NEC MultiSync LCD1735NXM NEW find.pcworld.com/43416	$500	87	Outstanding/ Very good	**FEATURES:** 10.4 pounds; dual video inputs;[1] tilt adjustment; built-in speakers; headphone jack; color- and image-adjusting software; TCO'99 compliant; three-year warranty, 24-hour daily toll-free tech support. **SUMMARY:** Instead of the usual bezel-mounted buttons, this sleek unit sports smooth, touch-sensitive controls that light up in the base of the stand. (★★★☆☆)
8	Samsung SyncMaster 172X find.pcworld.com/40877	$549	87	Very good/ Good	**FEATURES:** 8.3 pounds; dual video inputs;[1] tilt and height adjustments; color- and image-adjusting software; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** Light, small-footprint monitor offers multiple viewing modes and a swift 12-ms response time for comfortable gaming and DVD viewing; graphics quality could be better, however. (★★★★½ July 04)
9	IBM ThinkVision L170p find.pcworld.com/37499	$569	86	Very good/ Outstanding	**FEATURES:** 12.6 pounds; dual video inputs;[1] tilt, swivel, and height adjustments; TCO'99 compliant; three-year warranty; 24-hour daily toll-free tech support. **SUMMARY:** Vivid colors and uniform brightness contribute to this model's high graphics rating; nevertheless, the sturdy and adjustable L170p is suitable primarily for users who are content with a minimum of advanced features. (★★★½☆ Mar 04)
10	Eizo Nanao FlexScan L557 find.pcworld.com/39377	$599	86	Very good/ Very good	**FEATURES:** 12.3 pounds; dual video inputs;[1] tilt and height adjustments; built-in speakers; headphone jack; TCO'03 compliant; five-year warranty (three for backlight); 24-hour daily toll-free tech support. **SUMMARY:** Well suited for graphics use, the L557 has both preset color modes and a bevy of advanced on-screen menu options for refining screen and printout images. (★★★★½ Mar 04)

FOOTNOTE: [1] Includes both digital (DVI) and analog inputs. DVI requires a graphics card with a DVI digital output, which we use to test all monitors that offer DVI. **HOW WE TEST:** Judges rate how well each monitor displays 13 text and graphics images at a native resolution of 1280 by 1024. Some screens are from DisplayMate for Windows (www.displaymate.com). See find.pcworld.com/34613 for testing details. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Overall ratings are based on text and graphics quality (20 percent each), price (15 percent), features (20 percent), ease of use (15 percent), and service and support (10 percent). With LCD monitors, the entire screen area is viewable. Weight includes the base. See find.pcworld.com/10860 for details on *PC World*'s Star Ratings.

XIMETA™
creator of NDAS

Save Everything, Share Everything



NetDisk™

Network Direct Attached Storage

NetDisk is the only external hard drive that lets you share files with all the computers on your network.

Backup your files, secure against virus & hacker threats, and block spam with included Symantec software.

POWERED BY NDAS

symantec

www.ximeta.com

©2004 XIMETA, Inc. All rights reserved. The XIMETA, NetDisk, and NDAS logos are trademarks of XIMETA, Inc. All other trademarks are the property of their respective holders. Specifications subject to change without notice.

TOP 10 DVD DRIVES

Visit find.pcworld.com/43878 for reviews of all products tested this month and ranked in this chart.

THE DVD-BURNER SPEED RACE CONTINUES. Four new 12X drives join our internal drives list this month, including LG Electronics' Super-Multi GSA-4120B. The LG is inexpensive, supports double-layer writes, and is the only chartmaker to write to DVD-RAM. But Plextor's PX-712A still has a performance edge, and it retains the top spot. All five 12X models can achieve these fast write speeds using 8X media—a boon since you won't find 12X media on store shelves.

	INTERNAL DVD DRIVE	Street price (7/30/04)	Overall rating	Performance	Write performance (min:sec)[1]	Comments
1	Best BUY Plextor PX-712A find.pcworld.com/42466	$165	90	Outstanding	• DVD+R 6:31 • DVD+RW 10:09 • CD-R 2:50	**FEATURES:** IDE drive, 12X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R, 8MB buffer; Roxio Easy CD & DVD Creator 6.2 (with Drag-to-Disc and DVD Builder) and PhotoSuite 5 SE; 11-hour weekday toll-free support. **SUMMARY:** Zippy performer stays ahead of the latest 12X contenders, posting our fastest writes times with DVD+R. Drops $40 in price. (★★★½☆ July 04)
2	Best BUY LG Electronics Super-Multi GSA-4120B NEW find.pcworld.com/43252	$100	90	Very good	• DVD+R 7:11 • DVD+RW 12:04 • CD-R 3:21	**FEATURES:** IDE drive, 12X DVD+R, 2.4X double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 5X DVD-RAM, 40X CD-R, 2MB buffer; Ahead Nero Express 6.3 (with Nero Vision Express 6.3 and InCD 4.2), CyberLink PowerDVD 5 and PowerProducer Gold; 13-hour weekday, plus 8-hour Saturday, toll-free support. **SUMMARY:** Only drive on the chart to write to bare DVD-RAM discs. (★★★½☆)
3	Lite-On SOHW-1213S NEW find.pcworld.com/43810	$95	88	Very good	• DVD+R 7:42 • DVD+RW 10:03 • CD-R 3:04	**FEATURES:** IDE drive, 12X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R, 2MB buffer; Ahead Nero Express 6.3 (with Nero Vision Express 6.3 and InCD 4.2), CyberLink PowerDVD 5; 24-hour daily toll-free support. **SUMMARY:** Lite-On improves upon its 8X drive by bundling the latest software version and boosting write-once performance (by 96 seconds). (★★★½☆)
4	TDK Internal IndiDVD 12x+/8x- Multiformat Burner NEW find.pcworld.com/43812	$160	85	Very good	• DVD+R 7:48 • DVD+RW 9:04 • CD-R 2:44	**FEATURES:** IDE drive, 12X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R, 2MB buffer; Roxio Easy CD & DVD Creator 6.2 (with Drag-to-Disc and DVD Builder), PhotoSuite 5 SE, DVDMax Player; 8-hour daily toll-free support. **SUMMARY:** Drive has solid write-once and rewritable DVD performance; and, by a hair, it's the fastest drive we've seen at writing to CD-R. (★★★½)
5	Pacific Digital Mach 8 8x+/- DVD-Burner find.pcworld.com/42468	$115	79	Good	• DVD+R 9:39 • DVD+RW 8:52 • CD-R 3:39	**FEATURES:** IDE drive, 8X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 40X CD-R, 2MB buffer; Roxio Easy CD & DVD Creator 6.2 (with Drag-to-Disc and DVD Builder); 9-hour weekday toll-free support. **SUMMARY:** Performance is in line with what we'd expect from a drive with these write speeds, but the 12X Lite-On costs less and writes a DVD+R in 2 minutes less. (★★★☆☆ July 04)
6	Sony DRU-540A NEW find.pcworld.com/43802	$140	76	Very good	• DVD+R 6:57 • DVD+RW 16:25 • CD-R 3:27	**FEATURES:** IDE drive, 12X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 40X CD-R, 2MB buffer; Ahead Nero Express 6.3 (with Nero Vision Express 6.3, InCD 4.2, and BackItUp); 12-hour weekday and Saturday toll-free support. **SUMMARY:** Required nearly twice as long as comparable drives to complete our +RW tests (Sony says a firmware update will be on its Web site to fix this). (★★★½)
7	Pioneer DVR-A07 find.pcworld.com/4D421	$130	73	Good	• DVD+R 8:23 • DVD+RW 9:32 • CD-R 4:46	**FEATURES:** IDE drive, 8X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 24X CD-R, 2MB buffer; Ulead MovieFactory 3 SE, Burn.Now 3.5, VideoStudio 7 SE and Photo Explorer 8, NovaStor Nova Backup 7.1; 10.5-hour weekday toll-free support. **SUMMARY:** A versatile software bundle complements this drive's solid write-once performance, but its CD-R speed is slow. (★★★★☆ Apr 04)

	EXTERNAL DVD DRIVE	Street price (7/30/04)	Overall rating	Performance	Write performance (min:sec)[1]	Comments
1	Best BUY LaCie D2 DVD±RW Double Layer NEW find.pcworld.com/43808	$195	84	Good	• DVD+R 9:36 • DVD+RW 8:52 • CD-R 3:41	**FEATURES:** USB 2.0 and FireWire drive, 8X DVD+R, 2.4X DVD+R double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 32X CD-R, 2MB buffer; Roxio Easy CD & DVD Creator 6.2 (with Drag-to-Disc and DVD Builder), Easy Media Creator 7.1, and Toast Lite 6; 10-hour weekday toll-call support. **SUMMARY:** This stylish drive is housed in an aluminum case that can be mounted in a rack. (★★★★)
2	Memorex True 8X External Dual-Format DVD Recorder find.pcworld.com/42872	$190	83	Good	• DVD+R 9:40 • DVD+RW 9:58 • CD-R 3:40	**FEATURES:** USB 2.0 and FireWire drive, 8X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 24X CD-R, 2MB buffer; Ahead Nero Express 6.3 (with NeroVision 2.1, InCD 4.1, BackItUp, and ReCode 2); 9-hour weekday toll-free support. **SUMMARY:** Sleek, moderately priced external model has a well-rounded software bundle and good documentation. (★★★★☆ Aug 04)
3	TDK External IndiDVD+/-R 880N Multiformat Burner find.pcworld.com/42470	$250	76	Good	• DVD+R 9:42 • DVD+RW 8:54 • CD-R 3:39	**FEATURES:** USB 2.0 and FireWire drive, 8X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 32X CD-R, 2MB buffer; Roxio Easy CD & DVD Creator 6.1 (with Drag-to-Disc and DVD Builder), PhotoSuite 5 SE, DVDMax Player, and Toast Lite 6; 9.5-hour daily toll-free support. **SUMMARY:** Speed is nearly identical to the LaCie's, but this drive lacks double-layer support and costs more. (★★★★ July 04)

FOOTNOTE: [1] Write speed is the time (in minutes: seconds) to write 4.35GB to DVD, to format a blank rewritable DVD disc and copy 2.64GB of data to that disc, and to write 700MB to a CD-R.
HOW WE TEST: See find.pcworld.com/42952 for our testing methodology and for a breakdown of the overall rating, and see find.pcworld.com/10B60 for details on *PC World*'s Star Ratings.

The Promised Land?
Perhaps Not,
But Its Capacity
Will Inspire You.

Introducing the First 8.5GB Double-Layer DVD Recordable Disc

Need a little inspiration? Verbatim's new Double-Layer DVD+R disc is the biggest thing to happen to DVD. This single-sided disc delivers nearly twice the storage of standard DVD media. Which means you can record up to 4 hours of DVD quality video or archive up to 8.5GB of data using a double layer DVD recorder. Plus, you get the guaranteed performance and reliability that's made Verbatim the preferred choice in DVD. So if you're looking for a product with the capacity to inspire, take a look at the new Double-Layer DVD+R disc. From the optical technology leader – Verbatim.

Verbatim.

For more information, contact us at 800-421-4188 or online at www.verbatim.com.

© Verbatim Corporation 2004

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD
SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558

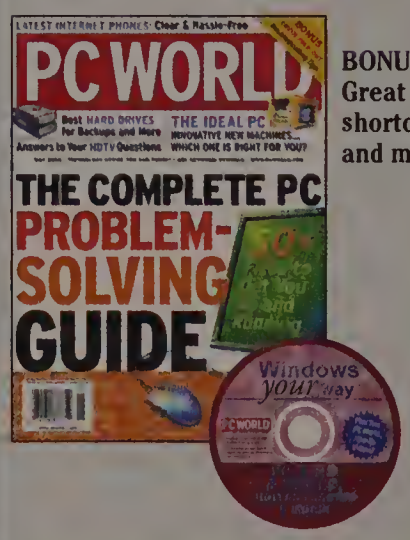
SUBSCRIBER SAVINGS CARD

76% OFF

ANNUAL COVER PRICE	YOUR ONE-YEAR RATE	YOUR FREE GIFT
$83.88	$19.97	FREE CD-ROM

☑ Yes! Rush me one year of PC WORLD and my Windows Tips CD-ROM! I'll pay just $19.97 for 12 monthly issues, that's 76% off the annual newsstand rate.

PLUS A FREE CD-ROM!



BONUS: Great tips, shortcuts and more!

Name

Address

City State Zip

Email (Optional)

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

Offer good in the US only. In Canada, please add $12 USD per subscription for postage, plus 7% GST (#R124669680). All other countries send $49.97 to PC World, P.O. Box 37560, Boone IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4AN2DK81

TOP 10 DIGITAL CAMERAS

Visit find.pcworld.com/43850 for reviews of all products tested this month and ranked in this chart.

THIS MONTH'S ONLY NEW ranking camera, the Canon PowerShot S60, exemplifies some of the best attributes of both point-and-shoot and advanced cameras: It offers lots of manual controls, such as aperture- and shutter-priority modes, as well as good ranges of settings, yet it remains relatively compact. Soon we'll review the PowerShot S70, a 7-megapixel camera in a body identical to the S60's. This month we also tested the slim Casio Exilim EX-Z40, the 10X-optical-zoom Kyocera M410R, and the $310, 5-megapixel Concord 5345z; you'll find reviews of these cameras online.

	POINT-AND-SHOOT CAMERA	Street price (7/26/04)	Overall rating	Image quality	Ease of use	Battery life/ shots	Comments[1]
1	Best BUY Sony Cyber-shot DSC-W1 find.pcworld.com/42834	$400	82	Very good	Very good	Very good/ 342	**FEATURES:** 5.1-megapixel resolution, 32MB Memory Stick, 38mm to 114mm focal range, 640 by 480 video with audio, 8.8 ounces. **SUMMARY:** What's not to like—the DSC-W1 is relatively compact but boasts a huge 2.5-inch LCD, provides some advanced controls (such as full manual exposure), and takes optional lenses. (★★★★½ Aug 04)
2	Best BUY Nikon Coolpix 3200 find.pcworld.com/42054	$249	81	Very good	Good	Good/ 220	**FEATURES:** 3.2-megapixel resolution, 14.5MB internal memory plus SD Card slot, 38mm to 115mm focal range, 640 by 480 video with audio, 6.7 ounces. **SUMMARY:** Small, inexpensive, and easy to use, the Coolpix produces fine images for a 3.2-megapixel model. Includes 15 scene modes and white-balance calibration. (★★★½ July 04)
3	Canon PowerShot A75 find.pcworld.com/42004	$300	81	Good	Very good	Very good/ 325	**FEATURES:** 3.2-megapixel resolution, 32MB CompactFlash card, 35mm to 105mm focal range, 640 by 480 video with audio, 10.8 ounces. **SUMMARY:** A great price for a camera with semiautomatic and manual shooting modes, and optional accessory lenses. Photos had fine color but erratic sharpness. (★★★½☆ Aug 04)
4	HP Photosmart R707 find.pcworld.com/41998	$349	80	Very good	Good	Good/ 270	**FEATURES:** 5.1-megapixel resolution, 32MB internal memory plus SD Card slot, 39mm to 117mm focal range, 320 by 240 video with audio, 7.4 ounces. **SUMMARY:** Flexible and simple-to-use compact camera has built-in help for novices and some advanced controls, such as white-balance calibration and manual focus. (★★★½ July 04)
5	Kodak EasyShare DX7630 Zoom find.pcworld.com/42264	$500	78	Very good	Very good	Very good/ 355	**FEATURES:** 6.1-megapixel resolution, 32MB internal memory plus SD Card slot, 39mm to 117mm focal range, 320 by 240 video with audio, 9.6 ounces. **SUMMARY:** A dazzling 2.2-inch LCD highlights this relatively small camera, which also has controls for aperture-priority, shutter-priority, and full manual exposure. (★★★★☆ July 04)
6	Olympus C-60 Zoom find.pcworld.com/42830	$449	78	Outstanding	Good	Good/ 225	**FEATURES:** 6.1-megapixel resolution, 32MB XD-Picture Card, 38mm to 114mm focal range, 320 by 240 video with audio, 7.1 ounces. **SUMMARY:** Powerful yet compact unit offers a fine selection of semi-automatic and manual exposure modes; a wireless remote trigger makes for easy self-portraits. (★★★½ Aug 04)
7	Canon PowerShot S60 NEW find.pcworld.com/43541	$499	78	Very good	Very good	Good/ 233	**FEATURES:** 5-megapixel resolution, 32MB CompactFlash, 28mm to 100mm focal range, 640 by 480 video with audio, 10 ounces. **SUMMARY:** A faster update of the PowerShot S50, this unit has revised buttons, longer zoom, slightly better battery life, and lots of manual controls. (★★★★☆)
8	Olympus D-580 Zoom find.pcworld.com/41948	$250	78	Very good	Good	Fair/ 127	**FEATURES:** 4-megapixel resolution, 16MB XD-Picture Card, 35mm to 105mm focal range, 320 by 240 video with audio, 7.6 ounces. **SUMMARY:** No frills, but bargain-priced for a 4-megapixel camera. Most controls are in well-designed menus, but deleting photos is a chore. The small rocker zoom control is awkward. (★★★ July 04)
9	Canon PowerShot S1 IS find.pcworld.com/42038	$499	77	Very good	Very good	Fair/ 144	**FEATURES:** 3.2-megapixel resolution, 32MB CompactFlash card, 38mm to 380mm focal range, 640 by 480 video with audio, 17.6 ounces. **SUMMARY:** The S1 IS is nicely designed, but it combines high-end features (including image stabilization) with a relatively low 3.2-megapixel resolution. (★★★½☆ July 04)
10	Canon PowerShot S500 Digital Elph find.pcworld.com/41916	$499	75	Very good	Very good	Fair/ 178	**FEATURES:** 5-megapixel resolution, 32MB CompactFlash card, 36mm to 108mm focal range, 640 by 480 video with audio, 8 ounces. **SUMMARY:** Rugged, finely crafted camera fits easily into a small bag or large pocket and has exceptionally fast startup; no scene modes to help novice photographers, however. (★★★★ July 04)

FOOTNOTE: [1] Resolutions are expressed in effective pixels, focal range is identified as 35mm equivalent, and camera weights include batteries. **HOW WE TEST:** To gauge picture quality, we take a series of shots, with and without flash, at the camera's highest resolution and at its default automatic settings. We photograph a complex still life and a mannequin to see how well each camera captures details and subtle colorings. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Each camera's overall rating is based on price (25 percent), picture quality (25 percent), ease of use (20 percent), features (10 percent), battery life (10 percent), and support (10 percent). For all ratings, higher is better. See find.pcworld.com/10860 for details on *PC World*'s Star Ratings.

BRILLIANT • BETTER • **BENWIN**

BENWIN Digital Surround Sound

It's never been easier to use a 5.1 system. After an effortless Plug and Play setup, you can surround yourself with a digital sound unlike any other. You don't need an amplifier. You don't need a digital decoder. All you need is a BENWIN 5.1 Hi Fi Wireless Remote Speaker System for superb sound in an instant.

Toll-Free: **888-9-BENWIN**

BENWIN

www.benwin.com

MORE REVIEWS

MISSED AN ISSUE OF *PC World* or passed your copy along to a friend? Here's a recap of other *Top 100* topics from previous issues. To read reviews of the products ranked on these Top 10 charts, go online and type in the *PC World* Find-It URL at the top of each chart. Next month in the *Top 100*, we'll look at point-and-shoot digital cameras, monochrome laser printers, and hard drives. Our Spotlight review will take a look at wide-screen monitors.

THE MEMOREX True 8X External Dual-Format DVD Recorder costs $205, which is reasonable for an external DVD drive. It also comes packaged in a slick case.

CANON'S 8-megapixel PowerShot Pro1 feels like an SLR, and has a $1000 price tag to match. Its barrel ring controls both zoom and manual focus.

ADVANCED DIGITAL CAMERAS

find.pcworld.com/43324

1	Best BUY Olympus C-8080 Wide Zoom find.pcworld.com/41860
2	Best BUY Olympus C-5060 Wide Zoom find.pcworld.com/39527
3	Canon PowerShot Pro1 find.pcworld.com/43164
4	Olympus C-770 Ultra Zoom find.pcworld.com/43174
5	Canon EOS Digital Rebel find.pcworld.com/38810
6	Nikon Coolpix 8700 find.pcworld.com/41862
7	Panasonic Lumix DMC-FZ10S find.pcworld.com/42260
8	Olympus C-5000 Zoom find.pcworld.com/39530
9	Casio Exilim Pro EX-P600 find.pcworld.com/42832
10	Sony Cyber-shot DSC-F828 find.pcworld.com/40802

From the September 2004 Issue

15-INCH LCD MONITORS

find.pcworld.com/43140

1	Best BUY Iiyama ProLite E380S-B find.pcworld.com/41198
2	Best BUY Eizo Nanao FlexScan L367 find.pcworld.com/41246
3	Sharp LL-T15G4 find.pcworld.com/43106
4	LG Electronics Flatron L1515SK find.pcworld.com/41258
5	NEC MultiSync 1560NX find.pcworld.com/40808
6	HP L1530 find.pcworld.com/41204
7	IBM ThinkVision L150p find.pcworld.com/41201
8	ViewSonic VG510s find.pcworld.com/43094
9	BenQ FP557s-v2 find.pcworld.com/43102
10	CTX Technology S500B find.pcworld.com/41333

From the September 2004 Issue

REWRITABLE DVD DRIVES

find.pcworld.com/42934

INTERNAL DRIVE

1	Best BUY Plextor PX-712A find.pcworld.com/42466
2	Best BUY Lite-On SOHW-812S find.pcworld.com/41850
3	AOpen 8X DVD+/-RW Burner (DRW8800) find.pcworld.com/41846
4	Pacific Digital Mach 8 8x+/- DVD-Burner find.pcworld.com/42468
5	Asus DRW-0804P find.pcworld.com/42472
6	Sony DRU-700A find.pcworld.com/42880
7	Pioneer DVR-A07 find.pcworld.com/40421

EXTERNAL DRIVE

1	Best BUY TDK External Indi DVD 840G 8x Multiformat find.pcworld.com/40475
2	Memorex True 8X External Dual-Format DVD Recorder find.pcworld.com/42872
3	I/O Magic External 8X USB 2.0 Dual DVD IDVD8DBE find.pcworld.com/42474

From the August 2004 Issue

19-INCH LCD MONITORS

find.pcworld.com/42874

1	Best BUY Dell UltraSharp 1901FP find.pcworld.com/35777
2	Best BUY Samsung SyncMaster 193P find.pcworld.com/42444
3	NEC MultiSync LCD1980SX find.pcworld.com/42434
4	Sharp LL-T19D1 find.pcworld.com/35765
5	ViewSonic VP191b find.pcworld.com/42442
6	HP L1902 find.pcworld.com/42436
7	Sony SDM-X93 find.pcworld.com/38303
8	Philips Brilliance 190P5E8 find.pcworld.com/42438
9	IBM ThinkVision L190p find.pcworld.com/42864
10	Princeton Digital SENergy 914 find.pcworld.com/39395

From the August 2004 Issue

PHOTOGRAPHS: (LEFT) RICK RIZNER; (RIGHT) MARC SIMON

HERE'S HOW

EDITED BY MICHAEL S. LASKY, DENNIS O'REILLY, AND ERIC DAHL

INTERNET TIPS

SCOTT SPANBAUER

Tweak Windows XP SP2 Security to Your Advantage

WINDOWS XP IS A safe and secure operating system. Really, it is—as long as you don't connect it to the Internet. To be fair, other operating systems, including Linux and Mac OS X, are vulnerable to online attacks, too. But Windows gets more attention, and hackers were quick to discover serious flaws in the OS that made possible the Blaster and Sasser worms, along with a legion of other exploits.

Trying to make Windows more secure, Microsoft released Windows XP Service Pack 1 in 2003, and Service Pack 2 recently (find.pcworld.com/43020). Whereas SP1 focused on remedying antitrust violations with bundled Windows utilities, almost all of SP2 is devoted to beefing up Internet security. SP2 doesn't thoroughly shield you from attacks, but it's definitely worth installing for its firewall improvements, Internet Explorer pop-up blocking, and security-configuration changes. Once you've installed it, you'll probably want to tweak some of SP2's new settings, and to know where—tweaked or not—the reinforced OS remains vulnerable.

SP2's most noticeable change to Windows XP is its introduction of a new Security Center Control Panel applet (see **FIGURE 1**). Security Center itself doesn't do much, but it provides a single location where you can view the status of the Windows Firewall (formerly known as Internet Connection Firewall) and of Windows' Automatic Updates service. The utility also tracks if you have an antivirus program installed, running, and updated.

If any of these three key security tools has been disabled or is less than fully functional, Security Center changes their corresponding status lights from green to either red or amber. The program also displays a warning icon in the system tray. A red light means that you should probably take steps to beef up security in the indicated area. An amber light signifies a service that is only partly enabled, or that a third-party product handles.

But even if all your dashboard security lights are green, you aren't necessarily safe. Conversely, certain red or amber conditions—triggered when Windows doesn't recognize your third-party firewall or antivirus program, for example—may be acceptable to you. So how do you disable that pesky tray icon?

Start by opening the Security Center: Choose *Start•Control Panel* and click *Security Center.* Many people will see a bank of green lights, thanks to SP2's more secure default settings. The firewall is now enabled by default for all Internet connections, which is a good thing if you don't have a third-party firewall program. The Automatic Updates feature downloads and installs often-crucial security updates

ILLUSTRATION: JOHN PIRMAN

INSIDE

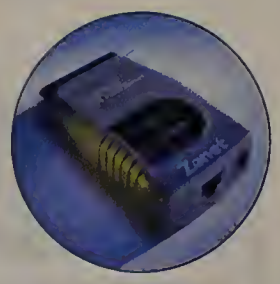
170 WINDOWS TIPS
Toggle your screen saver with a single click; no-fuss file paths; snappy Start menus; faster document scrolling.

172 HARDWARE TIPS
Ten tips for conserving and maximizing the power from your notebook's battery; back up your backup.

174 SECURITY TIPS
Keep viruses, worms, and spyware off your PC; control what starts up with Windows; prevent malware proactively.

176 ANSWER LINE
Share a printer on a small network; add an option to your right-click menus; more on sorting IE favorites.

EDITOR'S NOTE
Starting in this issue, *Here's How* will feature one in a revolving lineup of new columns. *Security Tips* replaces *Step-By-Step* this month.



176

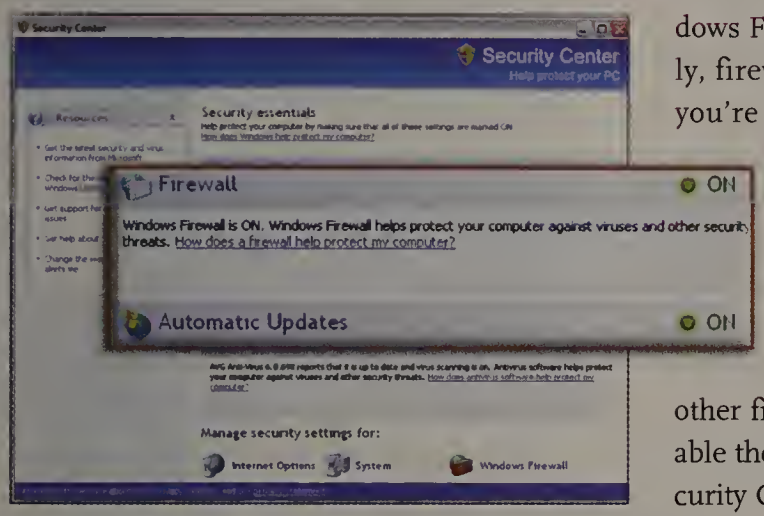


FIGURE 1: MONITOR WIN XP'S security status and modify settings in SP2's Security Center.

from Microsoft while you're online. Unless you went out of your way to disable it during installation of Service Pack 2, this option will be fully enabled as well. And if you've installed an antivirus program that Microsoft recognizes, you'll get a green light in the virus-protection area.

TWEAK THE FIREWALL

WINDOWS FIREWALL, which is enabled by default, blocks incoming worms, like Blaster, that try to enter your PC through a network connection; but it can't stop malicious apps that are already on your PC from making outgoing connections. You get no protection from viruses, worms, Trojan horses, and spyware that sneak onto your computer via your Web browser, e-mail, or instant messaging program. I recommend using a bidirectional third-party firewall such as Zone Labs' free ZoneAlarm (see "Security Must-Haves" on page 168 for download details). For *PC World*'s most recent review of firewalls, see June's "Bigger Threats, Better Defense" (find.pcworld.com/42886).

Once you've installed a bidirectional firewall, I recommend disabling the Windows Firewall altogether. Occasionally, firewalls obstruct an application you're trying to use over a network connection—and there's nothing more frustrating than spending a half hour tweaking, disabling, and even uninstalling a firewall, only to discover that the other firewall was the culprit. To disable the Windows Firewall in the Security Center, click the *Windows Firewall* link at the bottom of the dialog box, check *Off (not recommended)* in the next window, and click *OK*.

Alas, Windows may not recognize the third-party firewall installed on your PC. (It didn't see my copy of Sygate Personal Firewall, for example.) In such cases, Windows displays the security-warning icon in the system tray. That's no big deal, except that when other security lapses crop up they probably won't come to your attention. To disable the firewall security warning in the Security Center, click *Recommendations* in the Firewall pane, check *I have a firewall solution that I'll monitor myself*, and click *OK* (see **FIGURE 2**). Windows will then switch your firewall status to amber, and stop pestering you with firewall warnings in the system tray.

If Windows fails to recognize your antivirus program, you can easily disable Security Center false alarms: Click *Recommendations* in the Antivirus Protection pane, check *I have an antivirus program that I'll monitor myself*, and click *OK*.

AUTOMATIC UPDATES

IN GENERAL, it's unwise to let your computer automatically connect to the Internet, and then download and install software on its own. After all, that's how viruses, worms, Trojan horses, and spyware do their dirty work. But the tremendous threat posed by Internet attacks has changed the rules. Because viruses and worms often take advantage of flaws in Windows or its Internet Explorer Web browser, you need to install patches as soon as Microsoft makes them available (the same is true of your antivirus program's signature database files).

For most PC users, enabling Automatic Updates is the way to go. Nevertheless, situations may arise in which the default settings aren't optimal. For example, by default the service downloads and installs updates at 3 a.m., without inquiring into the user's preferences. But if your computer is always asleep or disconnected from the Internet at 3 a.m., you might never get any updates under the default arrangement. And if, like me, you regard Microsoft with less than complete trust, you might want to inspect the updates that are available for downloading before agreeing to install them on your PC.

To change Automatic Updates' set- ▶

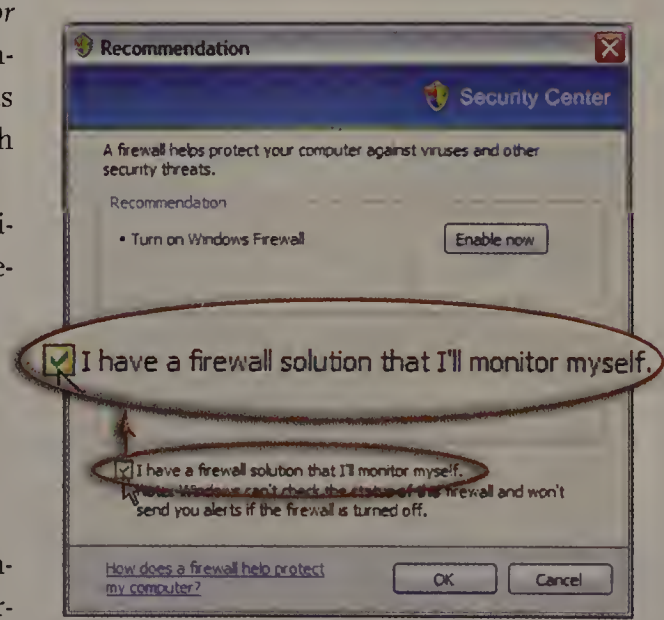


FIGURE 2: STOP ANNOYING alerts when SP2 fails to detect other firewall utilities.

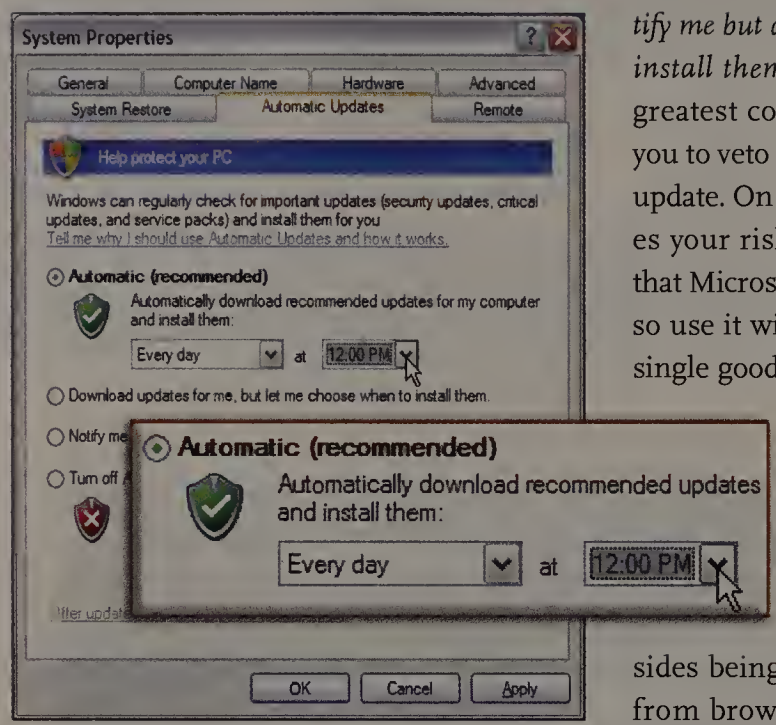


FIGURE 3: TWEAK AUTOMATIC updates in Win XP with SP2 to suit your situation.

tings, click the *System* link at the bottom of the Security Center window (or choose *Start•Control Panel*, and click or double-click the *System* icon). Select the *Automatic Updates* tab. To choose a time when you know your PC will be awake and available to download and install updates, select *Automatic (recommended)*, and pick a time from the drop-down list (see **FIGURE 3**). To instruct Windows to download but not automatically install updates until you can inspect them, select *Download updates for me, but let me choose when to install them.*

Finally, if you frequently rely on dial-up or wireless links that aren't suitable for Automatic Updates' sometimes-massive downloads, choose the option labeled *Notify me but don't automatically download or install them.* This setting gives you the greatest control over updates, enabling you to veto downloading or installing any update. On the other hand, it also increases your risk of getting hit by an exploit that Microsoft has already issued a fix for, so use it with caution. (I can't think of a single good reason to turn off Automatic Updates altogether.) Click *OK* to save your settings.

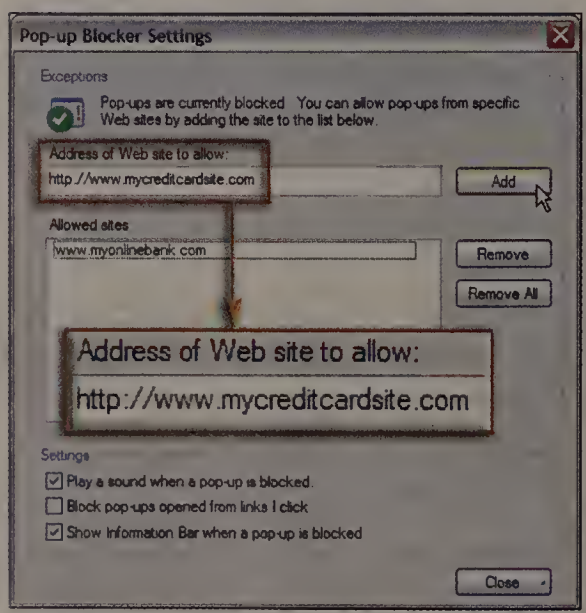


FIGURE 4: CUSTOMIZE IE'S NEW pop-up blocker to allow desired ones at select sites.

POP-UPS BEGONE

THE ABILITY to block pop-up browser windows, besides being convenient, can protect you from browser hijacking (where an unscrupulous Web site installs itself as your home page or runs ActiveX programs). Some other browsers, including Mozilla, Netscape, and Opera, have had pop-up blockers for a while. SP2 adds this long-needed feature to IE and activates it by default. (On a related note, SP2 also disables Windows' Messenger service, which formerly allowed spammers and other miscreants to pop up message windows on your Internet-connected PC.)

Though Internet Explorer's newfound pop-up blocking prowess is generally a positive thing, it can cause problems when you visit Web sites that use subsidiary, pop-up style windows for logging in, completing surveys, displaying videos, or performing other special tasks. If you discover that your favorite site doesn't work as expected after you've installed SP2, don't get too upset.

First, to test whether IE's pop-up blocker is responsible, disable it by choosing *Tools•Pop-up Blocker•Turn off Pop-up Blocker.* If that tactic solves the problem, you can instruct IE not to block pop-ups from that one site. To do so, first copy the site's address in IE's Address field (click the address to select it, and then press **<Ctrl>-C**). Choose *Tools•Pop-up Blocker•Pop-up Blocker Settings*, press **<Ctrl>-V** to paste the address into the 'Address of Web site to allow' field, and click *Add* (see **FIGURE 4**). Alternatively, you can type addresses directly into the field, if you prefer.

SP2 introduces a related security feature in the Outlook Express e-mail program. To block the tiny invisible images called Web bugs that sites use to identify you online, Outlook Express by default now blocks downloads of any external images referenced in HTML messages. If you receive one of those slick-looking e-mail newsletters, it may not look so slick after you've installed SP2.

To re-enable the display of these image links in e-mail messages (and risk having your e-mail newsletter–reading habits monitored by the newsletter's publisher), choose *Tools•Options•Security*, uncheck *Block images and other external content in HTML e-mail*, and click *OK*. ■

Send your questions and tips to nettips@sponbauer.com. We pay $50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. *Scott Sponbauer is a contributing editor for* PC World.

VERSION TRACKER

Security Must-Haves

WINDOWS XP MAY BE getting safer with SP2, but it's still a good idea to download and install the latest versions of the following free (and excellent) utilities to plug remaining security gaps.

ZoneAlarm 5: Despite Microsoft's efforts to beef up security in Windows, the operating system's built-in firewall can't block outgoing traffic, including the dastardly activities of worms, backdoor programs, and other menaces to your privacy and online security. Zone Labs' $40 ZoneAlarm Pro recently received a *PC World* Best Buy, but you don't need to spend a dime to get its essential features. The free version of ZoneAlarm omits Pro's pop-up blocker and e-mail virus filter, but none of its top-notch firewall capabilities.
5.6MB; find.pcworld.com/42946

Spybot Search & Destroy 1.3: Patrick M. Kolla's indispensable tool for detecting and removing spyware and adware is now better than ever. The latest version significantly improves Spybot's real-time spyware scanner, blocks unsafe downloads in Internet Explorer, and preserves Windows system settings from spyware and adware attacks.
4.15MB; find.pcworld.com/42654

emachines®

eMachines is for everyone

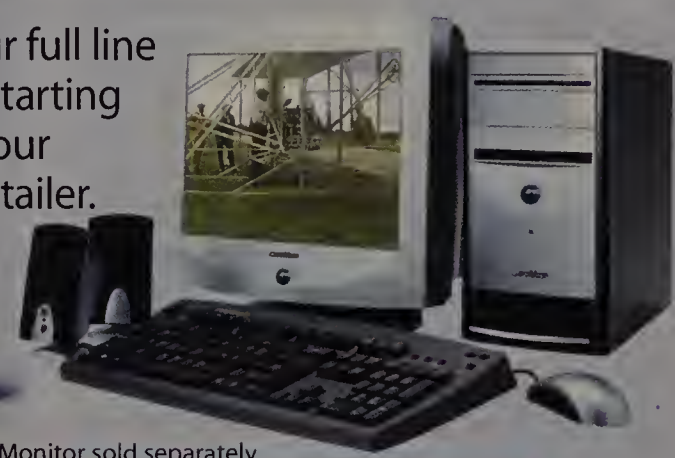
PROMISES MADE. PROMISES KEPT.

eMachines recommends Microsoft® Windows® XP

"Early inventors promised to build a machine that would fly. **They did."**

eMachines promised to build computers that would be so feature-rich and so affordable that they would fly off of retailers' shelves. We did!
Today eMachines is among the leading brands of computers sold in America... the second largest sold through retailers. Our reputation for quality and value is soaring to new heights every month.

Find out more about our full line of desktop computers, starting under $400, by visiting our web site or your local retailer.



Monitor sold separately.

eMachines T2824

Intel® Celeron® D 325 Processor
Microsoft® Windows® XP Home Edition
256 MB DDR Memory
40 GB HDD[2]
8-in-1 Digital Media
CD-RW/DVD Combo Drive
Intel® Extreme 3D Graphics
5 USB 2.0 ports
Intel PRO 10/100 LAN - Integrated

$399.99*
*After $50.00 Mail-in Rebate[1]

Software includes:
Microsoft Works 7.0 & Money 2004
Norton AntiVirus™ 2004[3]
AOL - 3-month membership[4]
(90-day subscription included)

One year technical support[5]

Upgrade to the eMachines T2958 for only $100.00!

You get:
Intel® Celeron® D 330 Processor
Microsoft® Windows® XP Home Edition
512 MB DDR Memory
80 GB HDD[2]
48X Max. CD-RW Drive
16X Max. DVD Drive

$499.99*
*After $50.00 Mail-in Rebate[1]

intel inside celeron®

Visit www.eMachines.com to see our full line of products

BEST BUY · J&R · circuit city · COMPUSA

All offers valid in US only and are subject to change without notice or obligation. May not be available through all sales channels. 1. For more information about rebate offer, log on to www.emachines.com/news/rebate.html or call 1-800-786-0797. 2. Accessible capacity varies; MB = 1 million bytes; GB = 1 billion bytes. 3. Ninety days of LiveUpdate feature included. Internet connection required. 4. Additional phone charges may apply. Call 1-800-846-2000 for details and access numbers. Check the number you select with your local phone company. New US members 18+ only. Major credit card or checking account required. 5. Telephone Technical Support is at no additional charge for one year from date of purchase. Long distance charges may apply, depending on your calling area. Copyright © eMachines, Inc. All rights reserved. eMachines Terms and Conditions of Sale apply. eMachines is either a trademark or registered trademark of eMachines, Inc. in the United States and/or other countries. Intel, Intel Inside, Intel Inside logo, Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States. Norton AntiVirus is a trademark of Symantec Corporation. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Other trademarks are property of their respective owners.

Photos Courtesy of Special Collections and Archives, Wright State University.

Ad Code: 115359

WINDOWS TIPS

SCOTT DUNN

THE FAST LANE TO YOUR FILE PATHS

GIVE YOUR START MENU MORE ZING

SHUT DOWN APPS WITH ONE CLICK

Toggle Your Screen Saver With a Single Click

? WHEN I EDIT and burn my own DVDs, it's bothersome to navigate to my Display Properties dialog box repeatedly to switch my screen saver off so I don't end up with just a nice coaster. Deactivating my screen saver takes no fewer than four clicks. That may not seem like a lot, but it's a hassle to deactivate and restore all the time. Is there a way to create a desktop icon to toggle the screen saver on and off?

Jeffrey McCullough, Baltimore

IT'S HELPFUL TO turn off a screen saver before burning CDs or DVDs, running backup software, defragmenting a drive, or performing other PC activities. Unfortunately, Windows makes doing so unduly difficult. But you can create shortcuts for this purpose that you can access with a single click or keystroke combination.

First, create a Registry file that turns off your screen saver. Choose *Start•Programs* (or *All Programs*)*•Accessories•Notepad*. On the first line, type **Windows Registry Editor Version 5.00** and press **<Enter>** twice to add a line break. Then type **[HKEY_CURRENT_USER\Control Panel\Desktop]** and press **<Enter>**. Finally, type **"ScreenSaveActive"="0"** and press **<Enter>** (see **FIGURE 1**).

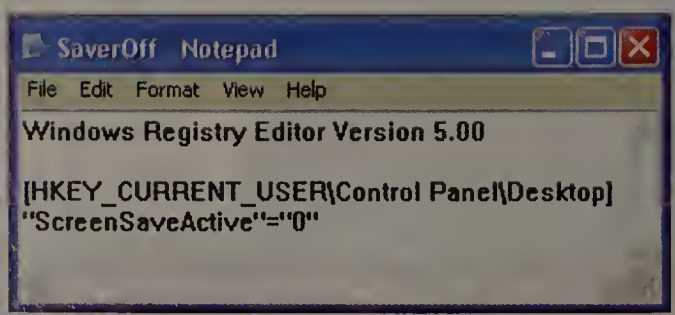


FIGURE 1: DISABLE YOUR SCREEN SAVER with a single click by using this custom Registry file.

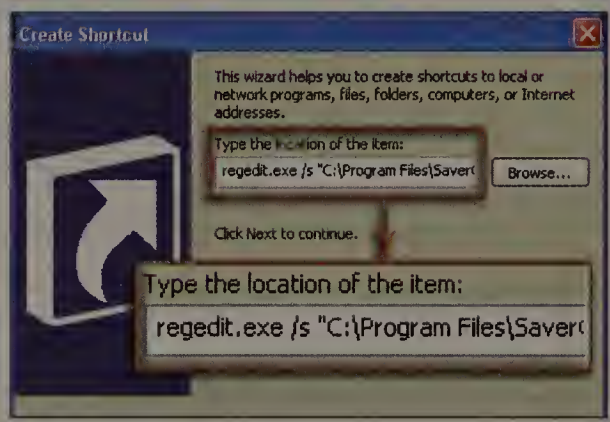


FIGURE 2: TYPE THE PATH to your new screen-saver Registry file in the Create Shortcut Wizard.

Choose *File•Save As* and navigate to a convenient location (write down the path to the file; you'll need to know it later). Type a name like **SaverOff.reg** (be sure to include the three-letter file extension) and click *Save*. Now change the '0' to **1** and select *File•Save As* again. This time, type a name like **SaverOn.reg** and click *Save*.

The next step is to create two shortcuts that each merge one of these Registry files into the Windows Registry. Right-click the desktop and choose *New•Shortcut*. In the box, type **regedit /s** followed by a space. After the space, type **SaverOff.reg** preceded by the path to the file (see **FIGURE 2**). Note that the next tip describes a quick and easy way to add the file path without typing. Click *Next* and type a name for your shortcut—something like **Turn Off Screen Saver**. Click *Finish*. Finally, repeat these steps, but use the path to SaverOn.reg and give it a name such as **Turn On Screen Saver**.

At this point you have two desktop shortcuts—one for deactivating your screen saver and the other for activating it. To disable the screen saver, just launch your *Turn Off Screen Saver* icon. To enable it again, run the other shortcut.

Finding the desktop shortcuts could slow you down as you minimize windows (press **<Win>-D** to minimize everything, or click the Show Desktop icon in the Quick Launch toolbar). To activate the shortcuts via your keyboard, right-click the *Turn Off Screen Saver* shortcut and choose *Properties*. With the Shortcut tab in front, click in the *Shortcut key* box and press the key combination you want to use to turn off your screen saver. You can press a single function key (like <F2>), but it's better to use a key or key combination that you will not need in another application. You can select almost any key on your keyboard for this purpose, but if you choose something other than function keys, your shortcut must begin with **<Ctrl>-<Alt>**, **<Ctrl>-<Shift>**, **<Shift>-<Alt>**, or **<Ctrl>-<Shift>-<Alt>**.

While you're in the shortcut's Properties dialog box, you may want to use the *Change Icon* button to give the shortcut a distinctive appearance. Type **%windir%\system32\shell32.dll** in the box at the top to see a large number of icons to choose from (see **FIGURE 3**). Once you've made your selection, click *OK* to close the Properties box for the shortcut icon. Repeat these steps for the other screen-saver shortcut, giving it a different key combination. You'll press one combi-

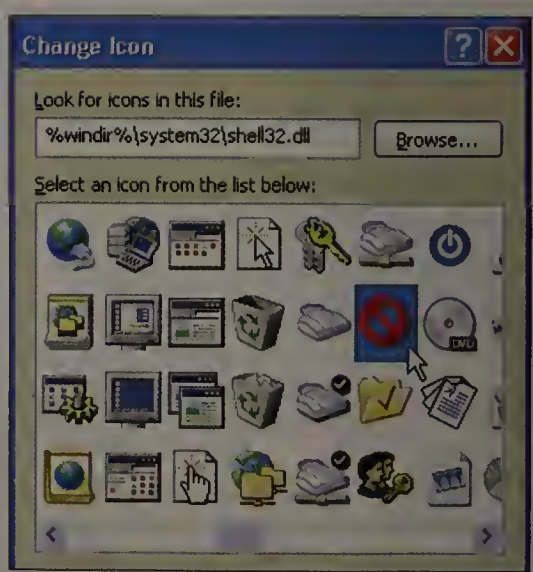


FIGURE 3: PICK AN ICON for your screen-saver shortcuts in the Change Icon dialog.

nation to turn the screen saver off, and the other to turn it back on. After you're done, you can place these shortcuts in any subfolder of the Start Menu folder.

You can disable or enable your screen saver with a single click of your mouse if you add the shortcuts to your Quick Launch toolbar (see **FIGURE 4**). If you don't

FIGURE 4: YOUR SHORTCUTS work with one click when put on the Quick Launch toolbar.

see this toolbar on your taskbar, right-click the taskbar and choose *Toolbars•Quick Launch*. Select both of the shortcut icons you created, click and hold down the right mouse button as you drag them

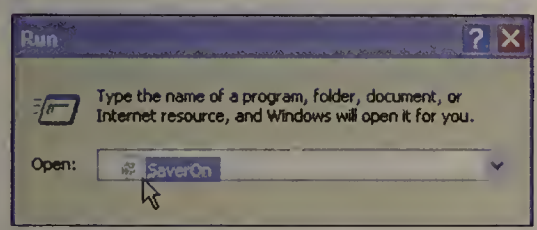


FIGURE 5: INSTANTLY COPY the path to any file by dragging its icon to the Run text box.

to the Quick Launch area, release the button, and choose *Move Here*. If you don't see the shortcuts, you may need to drag the border of the Quick Launch toolbar to make it larger. If the toolbar border does not budge (in Windows XP only), right-click the taskbar and choose *Lock the Taskbar* to unlock it. Resize your toolbars, and then repeat the command to relock it.

NO-FUSS FILE PATHS

Windows ME 98 XP 2K

WHETHER YOU'RE creating a batch file or sending an e-mail message telling someone on your network how to find a certain file, typing a file path can be a pain. And if you mistype, you might not discover the mistake until something goes wrong.

To make Windows do the typing for you, start by locating the icon for the file whose path you need to know. Next, select *Start•Run* or press **<Win>-R**. Press **<Delete>** or **<Backspace>** to remove the text in the Run dialog box. Drag the file icon to the text box in the Run dialog box (see **FIGURE 5**). Voilà! The entire path appears in the text box. Windows even adds quotation marks for paths that need them. Right-click the path, choose *Select All*, right-click again, and choose *Copy*—and you're ready to paste the path wherever you need it.

A SNAPPIER START MENU

Windows ME 98 XP 2K

IF YOUR Start menus appear tardily, you might be able to speed them up by editing the Windows Registry. Choose *Start•Run*, type **regedit**, and press **<Enter>**. Navigate in the left pane to *HKEY_CURRENT_USER\Control Panel\Desktop*. With the Desktop icon selected on the left, right-click and choose *Export*. Pick a spot for your Registry key backup, give the file a name like 'Registry Desktop Backup', and click *Save*.

Now choose *MenuShowDelay* in the right pane. If you don't see it, right-click in the right pane, choose *New•String Value*, type **MenuShowDelay**, and press **<Enter>**. Double-click the icon, change its 'Value data' setting (the default is 400) to something smaller, even 0, and click *OK*.

There's yet another way for you to goose your menus in Windows XP: Right-click the desktop, choose *Properties•Appearance•Effects*, uncheck *Show shadows under menus*, and then click *OK* twice.

LET THE GOOD TIMES SCROLL

Windows XP 2K

YOU CAN DRAG the scroll box (the little elevator car in the shaft of the scroll bar on the right side of many application windows) to move through a document. You can also click above or below the box to advance or back up one screen at a time, or move through the file incrementally by clicking the arrows at the top or bottom of the bar.

New versions of Internet Explorer, Notepad, Windows Explorer, and other apps add more scroll-bar tricks. To get to the middle of a long document, Web page, or file list, position your pointer in the middle of the scroll bar, right click, and choose *Scroll Here*. The right-click menu has commands for jumping to the top or bottom of a file as well (see **FIGURE 6**). The Page Up, Page Down, Scroll Up, Scroll Down commands are less helpful since they require two clicks for actions you can already accomplish with one. Note that Wordpad doesn't use this Windows feature, nor do Microsoft Word and Excel prior to version 2003. ■

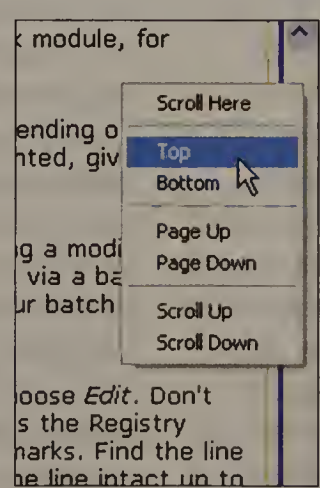


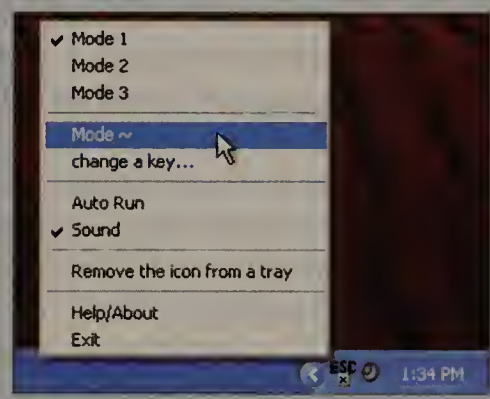
FIGURE 6: SCROLL easy via the right-click options.

Send Windows-related questions to scott_dunn@pcworld.com. We pay $50 for published items. See find.pcworld.com/31607 for more Windows Tips. *Scott Dunn is a* PC World *contributing editor.*

WINDOWS TOOLBOX

Close or Minimize Windows With a Single Keystroke

IF YOU SPEND WAY too much time positioning your pointer over the little Close or Minimize buttons in your open windows, or futzing with keyboard shortcuts like <Alt>-<F4>, try EscapeClose. This dandy piece of freeware can turn your keyboard's <Esc> key into an instant shutdown button that works with most applications. It can also turn the ~ (tilde) key into a minimize button for moving the currently open window to the taskbar. If



using these keys for windows management makes you nervous, EscapeClose has a safer mode in which the <Esc> key just moves the pointer to the window's close or minimize button, creating a two-step escape (**<Esc>**, click). EscapeClose is free, but for more windows-management options, spend $15 and get EscapeClose Pro. Visit find.pcworld.com/43034 to download the free version.

HARDWARE TIPS

KIRK STEERS

LAPTOP POWER CONSERVATION | MORE ON SERIAL ATA POWER CABLES | CHECK BACKUP DISCS FOR ERRORS

Maximize the Power From Your Notebook's Battery

SOONER OR LATER, every laptop owner asks the same question: How long will my battery last? For most people, sadly, the answer is the same: not long enough. But there are plenty of things you can do to get every last minute of power out of your notebook's battery.

Use power management: Judicious use of your notebook's power-management software can translate into many minutes of extra computing time. If your notebook comes with a power console applet that lets you create customized power profiles, use it to adjust the settings until you get the right mix of functions and battery life. If your laptop doesn't have such a program supplied by the notebook vendor, use Windows' perfectly adequate Power Options utility in Control Panel (it's called Power Management in Windows 98).

Dimmer is a winner: A big laptop energy sink is its LCD screen. Reducing the screen's brightness conserves battery life. For example, when I work on a red-eye flight, I can squeeze up to 45 additional minutes out my Sony VAIO notebook by toning down the screen brightness. Most notebooks have an easy-to-access keystroke sequence, function (Fn) key, or software utility for adjusting this variable.

If a dim screen is good for battery life, a blank one is better. Windows' Power Options/Power Management utility lets you tell your notebook how long to wait before blanking the screen. In Windows XP and 2000, open Control Panel, select *Performance and Maintenance* (if you're in Category view), and click or double-click *Power Options*. In Windows 98, open Control Panel and double-click *Power Management*. On the Power Schemes tab, choose *Portable/Laptop* in the 'Power schemes' drop-down menu. In the menu next to 'Turn off monitor', choose the length of time the screen can sit idle before it goes blank (see **FIGURE 1**). The shorter the interval, the more power you'll save. The shortest option, 'After 1 min', may drive you nuts, however.

The Power Options and Power Management programs have settings for your notebook's other big power glutton—the hard drive—as well. Once again, you'll need to find the setting that works best for you. Remember to reduce the frequency of auto saves in PIMs, word processors, and other software; your hard drive may otherwise lose power-saving sleep.

Go unplugged: Remove PC Cards and USB or FireWire devices that you don't need. If your PC has a built-in wireless card, turn it off or disable it when not in use.

Make like a bear: Most PCs have Hibernate and Suspend modes that are easy to activate from the keyboard. Check your notebook's documentation for its setting. Suspend (also called Stand By mode) typically holds your current information in RAM with a minimum of power, so the system comes back to life quickly. Hibernate writes everything to disk and shuts off, so it saves more power than Suspend, although it also makes reactivating your PC take longer. Still, awakening a hibernating system is much faster than cold-booting one that has been turned off.

Lean is green: To keep your laptop's CPU from doing unnecessary work, shut down any hardware or software you don't need. Check the icons in your system tray (on the bottom right near the clock); there's a good chance you can shut most of these down, though they will likely restart the next time Windows loads. Browse to find.pcworld.com/43266 and scroll down to "Stop Autostart Apps" for instructions from last June's *Windows Tips* column on how to disable programs that start automatically with Windows.

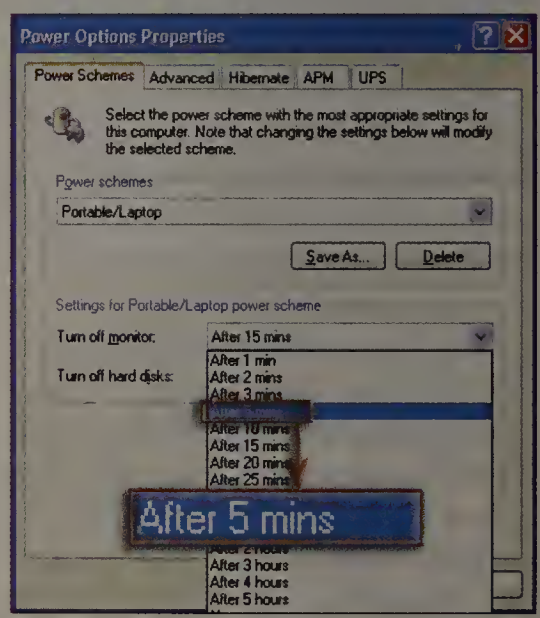


FIGURE 1: USE WINDOWS' POWER options to set your screen to shut down frequently.

To track the effect that different programs have on the CPU in Windows 2000 and XP, press **<Ctrl>-<Alt>-<Delete>** to open the Task Manager. Select the *Performance* tab to see a handy graph of CPU usage (see **FIGURE 2**). In Windows 98 and Me, this information resides in System Moni-

BACK UP YOUR BACKUP

IF YOU STORE CRITICAL backups on CD-ROM discs, try out CDCheck, an error-checking and data-recovery utility that's free for consumers. The program creates error-checking files for a CD, stores them on your hard drive, and then lets you compare these files with those kept on your backup CD to ensure that the disc is still readable. If CDCheck finds evidence of CD damage or corrupted data, it may be able to recover the lost files. Browse to find.pcworld.com/43062 to download the program.

FIGURE 2: MONITOR CPU USAGE via the Performance tab in Windows' Task Manager.

tor: Click *Start•Programs•Accessories•System Tools•System Monitor* to open it.

Disable devices you don't need that may draw a small amount of power when on but not in use. For instance, if you're on a long flight, you probably won't use your modem, your network card, your parallel and serial ports, and possibly your DVD or CD-ROM drive. You can easily disable all of these in Device Manager. To open Device Manager in Windows 98 and Me, right-click *My Computer* and choose *Properties•Device Manager*. In Windows 2000 and XP, right-click *My Computer* and select *Properties•Hardware•Device Manager*. To disable a device, right-click its listing under the appropriate category and choose *Disable* (see **FIGURE 3**).

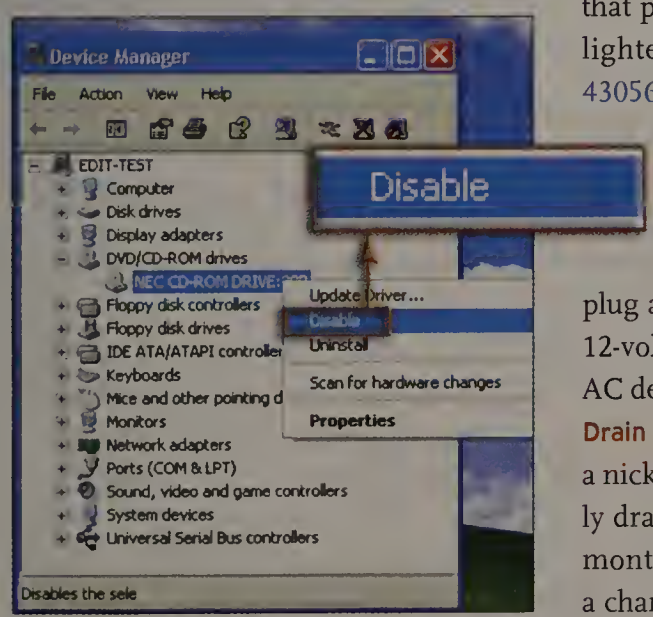


FIGURE 3: SAVE NOTEBOOK battery life by temporarily disabling devices you don't need.

If you'll be disabling devices regularly, save time by creating a Windows hardware profile. See Steve Bass's "Who Knew Your PC Could Do That?"(find.pcworld.com/43054) for instructions on how to create profiles in all versions of Windows.

Improve your memory: Adding more memory to your laptop saves power by reducing Windows' reliance on the virtual memory swap file on your hard disk.

Rub it down: Clean your battery's metal contacts every couple of months with a cloth moistened with rubbing alcohol.

Carry a spare: Purchase an extra battery pack, if you can afford it. Expect to pay $85 to $235, but shop around for bargains. Battery-vendor Web sites and EBay are good places to start your search.

If you can splurge a bit, you'll get up to three times your current battery life with the MaxPower 60 Powerpack battery from Lind Electronics (www.lindelectronics.com). The 3-pound MaxPower 60 is only 0.5 inches thick and about the same width and length as a standard laptop.

Charge frequently: Carry a battery charger/AC adapter with you on the road, and plug it in whenever you get the opportunity. If the power adapter that came with your notebook is too bulky, check out the line of universal power adapters offered by Belkin (www.belkin.com) and Targus (www.targus.com). The adapters are thin and light, and the Targus model doubles as a charger for your cell phone.

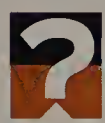
For road warriors and frequent fliers, Targus and Belkin offer power adapters that plug into 12-volt outlets, such as car lighters. Browse to find.pcworld.com/43056 to see Targus's list of airlines that offer power connections.

In lieu of a 12-volt adapter, you can use a DC-to-AC converter such as Belkin's $30 ACAnywhere to plug an AC power adapter directly into a 12-volt outlet. ACAnywhere can run any AC device at up to 140 watts of power.

Drain it: If you have an old laptop that uses a nickel–metal hydride battery, completely drain and recharge the battery once a month to maximize its capacity to hold a charge. Most new laptops use standard lithium ion batteries that need not be drained to maximize their chargeability.

If you're in the market for a laptop, you'll get the best battery life from systems that are based on Intel's Centrino platform. As with any new technology, however, check the *PC World* review before you buy. Graphics chips, peripheral interconnects, and many other factors can influence notebook battery life. Real-world results may not mirror the vendor's performance claims.

POWER PITFALL



I READ YOUR article "Get the Hard Drive That's Right for You and Your PC" [*Hardware Tips*, June, find.pcworld.com/43060] and was shocked at some of the details you left out. First, you need a power supply that also has a Serial ATA power connector. The SATA power connection is not the same as the standard Molex connection used on a standard IDE drive. An adapter to convert the standard cable to SATA costs only about $2. In addition, you mention that the IDE ribbon cables take up a lot of room. In my PC I use "rounded" IDE cables. They don't use much more room than the SATA cable does.

Dominick Meglio, via the Internet

BOTH ARE VERY good points. Power supplies with SATA-compatible connectors have been in short supply in the past, but they're quickly becoming much easier to find. And as Meglio says, a SATA power adapter is cheap and readily available. If you buy a new power supply with a SATA connector, or a new PC that has a new power supply, find one that supports 12 volts, 5 volts, and 3.3 volts. Many systems support only 12V and 5V, which is fine for today's SATA hard drives but may not support future hard-drive designs.

If you're building a PC or if your current machine has problems with case overheating, rounded IDE cables are definitely worth using. They're available at computer stores and online for less than $10. On the other hand, if your system ain't broke, don't fix it. ■

Go to find.pcworld.com/31511 for past Hardware Tips *columns. Send your tips and questions to kirk_steers@pcworld.com. We pay $50 for published items. Kirk Steers is a* PC World *contributing editor.*

SECURITY TIPS

ANDREW BRANDT

Keep Viruses, Worms, and Spyware Off Your PC

IT'S 2004: COMPUTER viruses, worms, Trojan horses, and spyware applications are flooding the world's networks. You're nuts to use a PC without an antivirus tool, but that alone isn't enough. Antivirus programs can't detect a new virus until it is already on the loose. That leaves your system vulnerable for the hours or even days it takes your antivirus vendor to deliver an update. Fortunately, you can help stop the nastiest viruses in their tracks—even before anyone knows about them.

Patch that system, private! It's time to bust out the old drill-sergeant voice, because anyone who doesn't follow this simple instruction is going to have to drop and give me 50 knuckle push-ups. Okay, everyone repeat after me, "Unpatched systems are the devil's spawn."

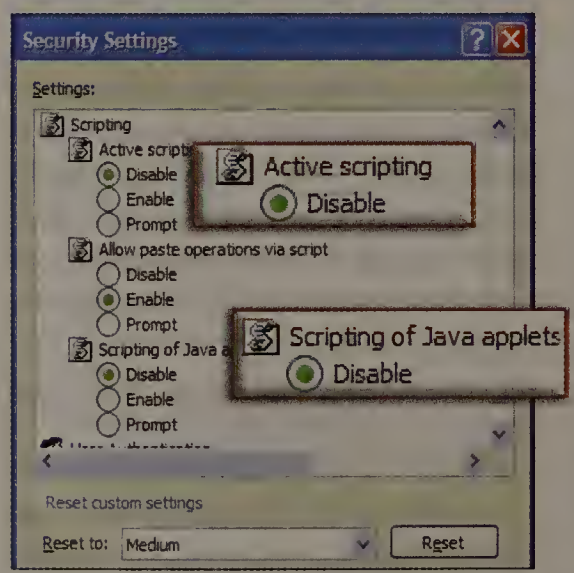


FIGURE 1: KEEP WEB PAGES from loading dangerous scripts via these settings in IE.

Enable Automatic Updates: In Windows XP, right-click *My Computer*, choose *Properties•Automatic Updates*, and make sure that 'Keep my computer up to date' is checked. (See this month's *Internet Tips* on page 166 for more on Automatic Updates.) Once a month (preferably just after Microsoft announces its latest security fixes), visit windowsupdate.microsoft.com, let the site scan your system, and then download anything labeled 'Critical'. Every month, no exceptions—got it?

Turn off scripting behaviors in Internet Explorer: Many worms and viruses spread through Web page scripts (commands in the page that push the worm out to anyone who opens it in IE). Other browsers don't have this problem, but if you can't or simply won't change to Opera, Mozilla, or another browser, you must alter IE's scripting settings to block the threat.

In IE, click *Tools•Internet Options•Security*. Choose the Earth icon under 'Select a Web content zone', and click *Custom Level*. The settings in the dialog have three options: Disable, Enable, and Prompt. Enabling everything is asking for trouble, but being prompted every time a script or ActiveX control wants to run will drive you batty. In any event, disable 'Download unsigned ActiveX controls', 'Initialize and script ActiveX controls not marked as safe', 'Active scripting', and 'Scripting of Java applets' (see **FIGURE 1**). Set 'Java permissions' to *High Safety*.

With scripts disabled, many of your favorite Web sites may not open. Also, your company intranet or Web mail service may require scripting. If so, add the URLs for these sites and services to IE's Trusted Sites list. Open IE and click *Tools•Internet Options•Security*. Select the *Trusted Sites* icon, click *Sites*, and then enter the URLs one at a time. Uncheck *Require server verification (https:) for all sites in this zone*, and click *OK* (see **FIGURE 2**).

Control what starts up with Windows: Many worms place a reference to themselves in a portion of the Windows Registry that defines what programs start up with Windows. The TeaTimer applet that comes bundled with Spybot Search & Destroy 1.3 (find.pcworld.com/42746) and with WinPatrol (find.pcworld.com/39776) can control what gets added to this list. TeaTimer asks you to verify any program that seeks to be added to that list. Spybot and WinPatrol are free, so why not use both?

Use a software and a hardware firewall: If you have broadband Internet service—even if you have Zone Labs' free ZoneAlarm or some other software firewall active on your PC—you can't be too safe. Belkin, D-Link, Linksys, and other vendors sell inexpensive broadband gateways that bounce back worm attacks that otherwise would reach your computer. ■

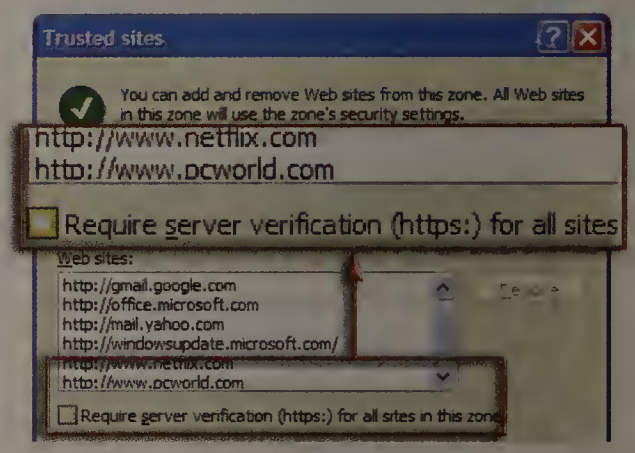


FIGURE 2: UNCHECK SERVER verification to allow scripting in only the sites you pick.

Andrew Brandt is a senior associate editor for PC World *and the author of the monthly* Privacy Watch *column.*

PROACTIVE MALWARE PREVENTION WITH QWIK-FIX

IN EARLY TESTS, PivX's Qwik-Fix Pro (find.pcworld.com/43092) was successful in preventing malicious scripted Web pages from forcing Internet Explorer to load worms or spyware. The tool provides stopgap protection so that your system doesn't get infected while you're trying to download patches. Qwik-Fix Pro is free for noncommercial use, and businesses should be able to buy the corporate version by the time you read this.

www.shuttle.com

Shuttle XPC P8100 System

The PC of the future

In the future, desktop PC's will be a fraction of the size of archaic tower designs. In the future, desktop PC's will sport the latest processors and video cards, yet run whisper quiet.

The future is here with the Shuttle XPC P 8100. As the world's most advanced desktop PC, the XPC P 8100 crams incredible features and performance into a compact, stylish design. How advanced is it? The Shuttle XPC P 8100 is the world's first compact PC to support processors at 3.6GHz and beyond, the world's first all SerialATA PC, and the world's first compact PC to feature the latest PCI-Express video cards and expansion devices. Yet with all this technology, the XPC P 8100 runs amazingly cool and quietly.

At Shuttle, we create the next generation PC. xpc

Intel I915G, processors 3.6Ghz and beyond

Advanced Cooling Zones

Intergrated Cooling Engine

Up to FOUR Serial ATA Drives

Shuttle
We Create

ANSWER LINE

LINCOLN SPECTOR

How Do I Share a Printer on My Small Network?

WHAT'S THE BEST way to share a printer between two or more computers on a home network?

Alex Jennings, Pasadena, California

THE EASIEST and cheapest way is to connect the printer to one PC and allow the other systems on the network to print through that computer. Unfortunately, however, to permit users to print from any other machine on the network, the host computer (the one that has the printer plugged into it) must be powered on.

FIGURE 1: ZONET'S 1-PORT PRINT Server makes it easy to allow two PCs to share a single printer.

A print server solves that problem. But first, I'll describe how to share a printer that's attached to one computer.

Open Control Panel on the host PC: In Windows XP, select *Start•Control Panel•Printers and Other Hardware•View installed printers or fax printers* (if you have Control Panel in Classic view rather than in Category view, click *Start•Control Panel•Printers and Faxes*). In Windows 98, Me, and 2000, choose *Start•Settings•Printers*. In the Printers window, right-click the printer in question and select *Sharing*. Fill in the dialog box and click *OK*.

Now open Control Panel's Printers applet on the other PCs and select *Add a printer* (XP) or *Add Printer* (98, Me, and 2000). Follow the instructions in the Add Printer Wizard, making the appropriate choices for your network printer.

If you get tired of booting two PCs just to print, you may be ready for a print server, which links your printer directly to your network (see **FIGURE 1**). A stand-alone print server costs $40 to $45. If you're in the market for a network router anyway, consider buying one that has a built-in print server. Such models cost about $20 more than otherwise equivalent routers, so you'll save money and have one less AC adapter to deal with.

You can buy either a parallel or a USB print server, but I recommend that you choose a parallel model because USB print servers tend to encounter compatibility problems more frequently. If your printer lacks a parallel port, make sure that the USB print server you buy supports your printer. There should be a list of supported printers on the server manufacturer's Web site.

CUSTOM RIGHT-CLICK MENUS

HOW CAN I ADD an option to the context menu that pops up when I right-click a file?

Jolly Hansen, Phoenix

IF YOU WANT TO add an option for a specific file type, such as .doc or .zip files, open Windows Explorer and select *Tools•Folder Options* (*View•Folder Options* in Windows 98). Click the *File Types* tab. Scroll down the 'Registered file types' list to the appropriate type. Select it and click the *Advanced* button (*Edit* in Windows 98). In the Edit File Type dialog box, click *New*. In the Action field, enter a name for the option; this will become the text you see and select when you right-click a file. In the 'Application used...' field, enter the path and file name to the program that you might want to use to load the file—or click *Browse* to find and select the program. For folders, use the instructions given above, but for file type, select *File Folder* (the extension is '(NONE)').

To add an option for every file's context menu, put an appropriate shortcut inside your SendTo folder. First, select *Start•Run*. In Windows 2000, type **"c:\documents and settings*yourname*\sendto"** (where *yourname* is the name you use to log on; be sure to include the quotation marks). In Windows 98, Me, or XP, just type **sendto** in the Run dialog box. Then press **<Enter>**. To launch the Create Shortcut wizard, right-click a blank spot inside the SendTo folder and choose *New•Shortcut*. Your added shortcuts will appear as options in the context menu's SendTo submenu. ■

Send your questions to answer@pcworld.com. Answer Line *pays $50 for published items. See find.pcworld.com/31577 for more* Answer Line *columns. You'll find Contributing Editor Lincoln Spector's humorous and other writings at www.thelinkinspector.com.*

SORT IE FAVORITES, PART II

LAST JUNE I told you how to sort your Internet Explorer Favorites menu by right-clicking an item and selecting *Sort by Name* (see find.pcworld.com/43090). The problem with this technique is that you must repeat it for each submenu. I have since discovered a way to sort the Favorites menu and its submenus at one go. Select *Start•Run*, type regedit, and press <Enter>. Navigate the left pane to *HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\MenuOrder\Favorites*. Once there, delete the Order value in the right pane. Exit and reenter Internet Explorer. Now your Favorites menu and submenus will be alphabetized by name.

PHOTOGRAPH: MARC SIMON

16X SPEED

8.5GB STORAGE

The Best of Both Worlds!

Introducing 16X Speed and 8.5GB Capacity on One Double-Layer DVD!

Get the fastest possible burning speeds and the maximum storage capacity available today — on a single double-layer DVD — with the new AOpen® 16X DL DVD+/-RW Burner! The new AOpen DUW1608/ARR drive makes it a snap to burn movies, video, digital photos, audio, MP3 and other multimedia formats — even data back-ups. This state-of-the-art drive also serves as a diverse all-in-one DVD/CD writing device with DVD+R, DVD-R, DVD+RW, DVD-RW, CD-R and CD-RW formats.

The AOpen 16X DL DVD+/-RW Burner Includes:

- *Chameleon* Feature — 3 Interchangeable Color Faceplates
- Great Software Bundle — Impressive, Comprehensive
- Max Write Speeds — With Optimal Writing Speed Technologies
- Accurate Reading — Automatic Laser Beam Adjustment/Alignment
- Virtually Fool-Proof Burns — With Buffer Under-Run Protection
- Super-Quiet Operation — With Silent Technology Features
- Limited One-Year warranty — For Extra Protection

So contact your nearest AOpen dealer and start enjoying the best of both worlds in *your* world, with the new AOpen 16X DVD Burner today!

AOpen®

Visit our website at:
www.AOpen.com
Click "Where to Buy" and get yours today!
1-888-97-AOpen

© 2004 AOpen America Inc. All rights reserved. AOpen is a trademark and the AOpen logo is a registered trademark of AOpen Inc.
All other trademarks are the property of their respective owners.

Exclusive Gift to PC WORLD Subscribers!

Download your FREE Digital World issue today!

Once again, technology is changing everything. Entertainment products are going digital. Home theaters are becoming immersive experiences. The worlds of the PC, consumer electronics, and mobile communications are converging. Wireless communications are poised to turn every home into a networked house.

That's why the award-winning editors of PC World have created a new type of publication, Digital World. We want to help you make buying decisions with confidence, based on information that's authoritative, approachable, and even entertaining.

Among the products and services that it will cover are:

- HDTV and home theater
- Media-savvy PCs & software
- Gaming hardware
- Smart phones
- DVD recorders and DVRs
- Digital music & video services
- Gadgets (GPS units, etc.)
- New content formats (Super Audio CD, HD-DVD, etc.)
- Satellite TV and radio
- Car electronics
- Digital cameras & related products

Digital World features:

Major product reviews from our new "digital living room" testing facility.

How-to articles on setting up, troubleshooting, and upgrading consumer electronics products and systems, such as:

- Putting together a home theater
- Editing digital movies
- Streaming video and music over a wireless network

Digital World

TECHNOLOGY THAT POWERS YOUR LIFE

From the editors of PC WORLD

Premiere Digital World Issue!

Get It Free

As a PC World subscriber, you can download the premiere issue for FREE.

Just go to: http://find.pcworld.com/43830

BIG SAVINGS 76% OFF

Plus, FREE Windows Tips Mouse Pad

FREE!

Yes! Please enter my subscription (12 monthly issues) to PC World at the low rate of only $19.97. I will save **76% OFF** the annual newsstand rate and receive PC World's Windows Tips Mouse Pad FREE with my order.

1 YR COVER PRICE
~~$83.88~~
YOU SAVE
$63.91
YOUR COST
$19.97

Name _____

Address _____

_____

City _____ State _____ Zip _____

Email (optional) _____

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

Offer good in the US only. In Canada, please add $12 USD per subscription for postage, plus 7% GST (#R124669680). All other countries send $49.97 to PC World, P.O. Box 37560, Boone IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4AN1DS71

PC WORLD

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD
SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558

PC WORLD MARKETPLACE

SHOP HERE

FOR ADVERTISING INFORMATION CALL TOLL FREE:

888/254-0711

Senior Vice President of Sales
Neal Mandel 212/655-5157

Southeast/Midwest
Shirley Nixon 212/655-5114

Northwest
Michelle Tonzi 212/655-5201

Sales Manager/Northeast/West Coast
Debra Robbins 212/655-5111

INTERNET/ISPs

AIT	800/397-8320
Blue Genesis	866/258-3351
Cyberguys	cyberguys.com

PRODUCTIVITY

Inkfarm	800/INKFARM
Projector Lamp Center	projectorlampcenter.com
Projector People	888/228-9865
Datapilot	datapilot.com
Videx	541/758-0521

TRAINING/ENTERTAINMENT

Academic Superstore	800/580-9237
Capitol College	888/522-7486 x3026
Journey	800/874-9001

SERVICES/SUPPLIES

ESS Data Recovery	800/237-4200

WEB HOSTING

1 Hour Setup

Standard Hosting

"Award Winning Control Panel"

- FREE Web Based E-mail
- FREE Control Panel
- 300 MB Disk Space
- 20 GB DataTransfer
- Linux OS

from **$4.95** / per month

Dedicated Hosting

"The Developers Choice"

- Intel P4*
- 512 MB RAM*
- 80 GB Disk Space
- 1000 GB DataTransfer
- Linux or Windows OS

from **$39.95*** / per month

All Plans Include:

FREE 24/7 Customer Service
FREE Domain Registration
FREE Billing Software
FREE Dedicated IP
FREE Script Library
OS/Hardware Management
30-Day Risk Free
Redundant Bandwidth
Access templatestore.AITcom.net

Reseller Hosting

"Great for Web Hosting Resellers"

- FREE Shopping Cart
- FREE Control Panel
- FREE Domain Registration
- 1 GB Disk Space
- 1000 GB DataTransfer

from **$49.95** / per month

Business Hosting

"Great for Online Businesses"

- FREE Shopping Cart
- FREE Control Panel
- FREE Domain Registration
- Intel P4
- 80 GB Hard Drive
- 1000 GB DataTransfer
- Multiple Domain Hosting

from **$79.95** / per month

BEST VALUE!

AIT Inc. an Inc500 Company

HOSTING 190,000 DOMAINS World Wide

* Pricing subject to change and term/conditions.

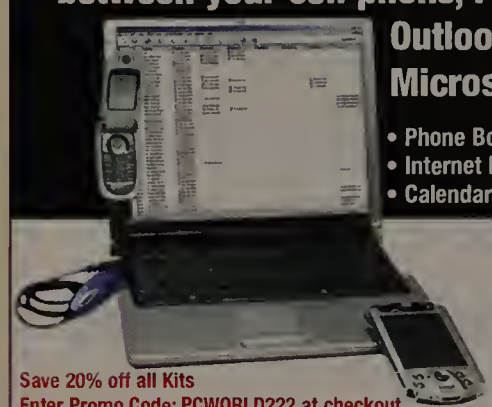
http://pcw.AIT.com CALL TOLL FREE 1-800-397-8320 sales@AITcom.net

JUST LOST ALL YOUR CONTACTS?

Manage, Transfer and Back Up Your Data!

With DataPilot you can transfer contact data between your cell phone, PC, Palm Desktop, Outlook Express and Microsoft Outlook.

- Phone Book Manager
- Ringtone Composer
- Internet Data Connect
- Image Editor
- Calendar
- SMS Manager



DATAPILOT®

Save 20% off all Kits
Enter Promo Code: PCWORLD222 at checkout
Valid 9/15/04-9/31/04
Shop online at: www.datapilot.com

susteen

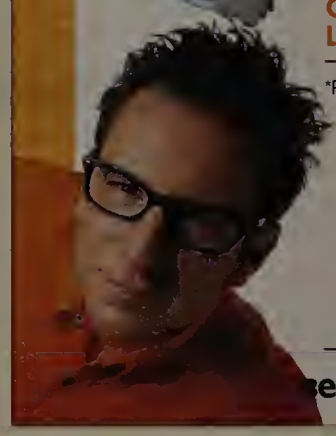
"If you find a projector for any cheaper, it fell off a truck."

MITSUBISHI ELECTRIC PRESENTATION PRODUCTS **SE1U**
Portable Powerhouse.
SVGA (800 x 600),
1200 ANSI lumens, 4.8 lbs.
Everyday Low Price $995.00

EPSON® **PowerLite 830p**
Superior Images.
XGA (1024 x 768) resolution,
3000 lumens, network-ready.
Call for Today's Low Price ..... ~~$3699.00~~

HITACHI **CP-X430W**
Big Power in a Small Footprint.
XGA, 2500 lumens, 9.9 lbs., multiple computer and video connections.
Call for Today's Low Price ..... ~~$2999.00~~

*Prices at time of printing - call for latest deals and discounts!

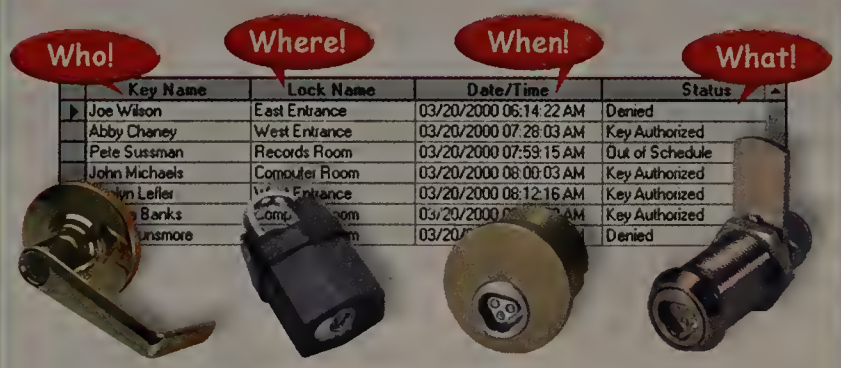


ProjectorPeople.com
Call 888-228-9865
M-F 8-8 EST. or order online at
www.projectorpeople.com

BenQ InFocus NEC proxima SHARP

CyberLock™

Access Control for Your Entire Facility



Track access to everything in the building!
The intelligent CyberLock cylinder installs without hardwiring in doorways, supply cabinets, cash drawers, and even in padlocks. User access can be limited to certain times and days, and an audit trail is stored in both the CyberLock and CyberKey™.

To learn how easy it is to upgrade to an intelligent access control system, call today or visit:

www.videx.com/lock29

Videx®

1105 N.E. Circle Blvd., Corvallis, OR 97330
541-758-0521 • Fax 541-752-5285

GCO1413

Get your free World Wildlife Fund Action Kit and help leave our children a living planet.

WWF

KICKASS SERVERS
FOR $69.99!
FREE 30-DAY TRIAL:
VM Server
Host from 10 to 100 Windows & Unix sites!
Enjoy the freedom to manage your own server and the comfort of knowing that your websites are running on our award winning clustered architecture. Let us take care of all the hardware and software while you concentrate your effort on what matters most: building websites and making more money!
Single domain hosting available for as low as $6.99!
Call TODAY! 1-866-258-3351
Blue Genesis
• Award Winning Technology
• 24X7 Outrageous Support
• 99.9% Uptime guarantee
• NO SETUP FEES!
Check out our free demo at BlueGenesis.com

got outlets?
PROBLEM
• Just plug those bulky adapters into the LIBERATOR and free up more outlets.
• Perfect for Home Theaters, Home Offices, Workstations, UPS systems, every room in your home or office.
use ALL outlets with the LIBERATOR!
5 Pack of LIBERATORS $8.95
121 2535
SOLUTION
Use Keycode S413667 when ordering and get your FREE 180 page Cyberguys!® catalog packed with over 3,000 great products!
CYBERGUYS!
ORDER NOW!
Call 800-892-1010 or go to cyberguys.com

Students & Teachers
SAVE UP TO 80%
Adobe® Photoshop CS
Save! 57%
Order Today!
Get the Best for Less!
Macromedia® Studio MX 2004
Save! 79%
Now! $189.95
4 Programs - 1 Price
Microsoft® Office Pro 2003
Save! 67%
Order Today!
4 Programs - 1 Price
FileMaker® FileMaker Pro 7
Save! 50%
Now! $149.95
#1 Selling Database
We carry thousands of industry-leading software and hardware products at huge discounts for students, teachers and schools ONLY. Call or visit us today and start saving!
Parents BUY FOR THE KIDS!
ACADEMIC SUPERSTORE
"WORKING HARD FOR EDUCATION"
"Ask about our low price guarantee!"
1-800-580-9237
PW.AcademicSuperstore.com

I.T. Professionals
Earn Your Master's Degree Online!
M.S. Degrees Available in:
• Network Security
• Computer Science
• Electrical Engineering
• Information Architecture
• Information & Telecommunications Systems Management
• Business Administration (MBA)
Real time evening courses
Live Audio Lectures and Student Interface
Fully Accredited
888-522-7486 x3026
www.capitol-college.edu

Don't be left in the dark!
Largest Selection and Discount Pricing on Lamps
Call Today or Go Online! 1-877-874-8827

LCD/Overhead/Slide
Currently stocking the following brands available for same-day shipping!

3M	Elki	Kodak	Proxima
BenQ	Elmo	Mitsubishi	Sanyo
Boxlight	Epson	NEC	Sharp
Canon	GE	Optoma	Sony
Christie	HP	Panasonic	Toshiba
	Hitachi	Philips	Viewsonic
Farjouda	InFocus	Plus	and More!

Projector Lamp Center

Ask about our Longer-Life Bulbs!
www.ProjectorLampCenter.com

WHILE SUPPLIES LAST!
Qty 2+: $9.99!
Qty 1: $10.99
Remanufactured HP 51645a (No. 45) cartridge.
more great deals at...
1-800-INKFARM
inkfarm.com
the ink & toner supersite.™

STUDENTS!
Save up to 75% OFF popular software titles!
Thousands Of Titles Available!!
Adobe
Microsoft
Discreet
Avid
Macromedia
AliasWavefront
Softimage
Autodesk
Extensis
Alien Skin
Mathsoft
Symantec
Corel
Bentley
Wacom
Many More!
FREE CATALOG!
Serving Students, Faculty and Schools Since 1990
1-800-874-9001
www.JourneyEd.com
Proof of student status required with order. Offer for U.S. & Canadian degree-seeking students only.
JourneyEd.com Education Marketing

Find it fast. Buy it now.

SERVICES/SUPPLIES

Hard Drive Problems?
Call ESS at 800-237-4200
• Affordable & reliable.
• State of the art data recovery technology.
• Clients include Harvard, NASA, & Lockheed.
ESS DATA RECOVERY LABS
www.savemyfiles.com

Together with communities, businesses and people like you, we preserve precious places around the world. As they were. As they are. As they will be. Forever.
The Nature Conservancy
Saving the Last Great Places
1-888-2 JOIN TNC | nature.org

PC WORLD

PRESIDENT, CEO Jeff Edman
EXECUTIVE ASSISTANT Patricia Owen

ADVERTISING SALES

PUBLISHER
Bob Ostrow (508/370-0844)
ASSOCIATE PUBLISHER
Wayne Silverman (201/634-2318)
SALES ASSOCIATE Sharon Patrick (201/634-2317)

EAST

EASTERN ADVERTISING DIRECTOR
New York City/Long Island/New England
Thalia M. Karakitsios (646/215-9395)
Mid-Atlantic/New York State/New Jersey/Southeast
Judy Sutter, Senior Account Manager (404/845-2884)
Midwest/Eastern Canada
Kathy McKay, Senior Account Manager (847/759-2723)
SALES ASSOCIATE
Tammy O'Sullivan (847/759-2722)

WEST

WESTERN ADVERTISING DIRECTOR
Orange County/San Diego/Washington
Susan Green (949/442-4021)
San Francisco/Los Angeles/Southwestern U.S./Texas/Western Canada
Miles Dennison, Senior Account Manager (415/267-1766)
SALES ASSOCIATE
Billie Sutherland (949/442-4014)
Silicon Valley/Oregon
Alicia Langer, Senior Account Manager (415/267-4578)
SALES ASSOCIATE
Vanessa Grenfell (415/978-3317)
Duane Hampson, Senior Sales Development Manager (415/978-3133)

CUSTOM PUBLISHING/EVENTS

ASSOCIATE PUBLISHER, MARKET DEVELOPMENT Michael Carroll (508/370-0842)
SALES ASSOCIATE
Angela Beaudoin (508/370-0841)

PC WORLD MARKETPLACE/ PC WORLD ACTION CARDS

Neal Mandel (212/655-5157)

PC WORLD REPRINTS

Joan Elizabeth Culp (717/399-1900 x135)

PCWORLD.COM AD SALES

ASSOCIATE PUBLISHER
Michael Carroll (508/370-0842)
Northwest
Melissa Gruber, Regional Manager (415/974-7373)
Southwest
Cindy Crow, Account Manager (949/442-4005)
East
Mark Barreca, Account Manager (732/544-2006)

PCWORLD.COM AD OPERATIONS

ONLINE AD OPERATIONS MANAGER
Brian Buizer (415/267-1722)
ONLINE AD OPERATIONS COORDINATOR Regina Rebello (415/975-2673)

MARKETING

SENIOR DIRECTOR OF MARKETING
Sandy Wong
SENIOR MARKETING COMMUNICATIONS SPECIALIST
Heidi Tanaka

RESEARCH

RESEARCH MANAGER
Lisa Huck

CONSUMER MARKETING

VICE PRESIDENT, CONSUMER MARKETING Shawne Burke Pecar
ASSOCIATE CIRCULATION DIRECTOR
David Cobb
SINGLE COPY SALES DIRECTOR
Holly Drawbaugh
DIRECTOR, RETENTION MARKETING
Lisa Radler
SENIOR SUBSCRIPTION MARKETING MANAGER Linda Trinh
SUBSCRIPTION MARKETING MANAGER Simon Thaler
MANAGER, RETENTION MARKETING
Robyn Patty

PRODUCTION

DIRECTOR, PRINT AND ONLINE PRODUCTION Nancy Jonathans
PRODUCTION MANAGER
Lisa S. Mireles
TRAFFIC MANAGER
Eliza Wee
ADVERTISING TRAFFIC COORDINATOR
Erika Pino

PCWORLD.COM MANAGEMENT

GENERAL MANAGER
Ulla McGee
ONLINE PRODUCT DEVELOPMENT MANAGER R. Bruce McCurdy
SENIOR MARKETING MANAGER
Rafael Sosa
CUSTOMER SERVICE SPECIALIST
Michael E. England

HUMAN RESOURCES

VICE PRESIDENT, HUMAN RESOURCES
Kate Coldwell
HUMAN RESOURCES MANAGER
Julie McKie
HUMAN RESOURCES COORDINATOR
Jenny Steele

TECHNOLOGY

CHIEF TECHNOLOGY OFFICER
Mary Zones
DIRECTOR, INFORMATION SYSTEMS
Norman Noble
SENIOR NETWORK ANALYST
Walter Clegg
CLIENT SERVICES MANAGER
Mariaelena Robles Quale
NETWORK MANAGER
Rodney Barnes
IT DEVELOPER/ANALYST
Stan Erhart
SYSTEMS ANALYST
Eileen Chaney
INFORMATION SYSTEMS SPECIALIST
Gabe Ramos
SENIOR SYSTEMS ADMINISTRATOR
Geoff Sturm
SYSTEMS ADMINISTRATOR
Justin Hunter
LEAD SOFTWARE ENGINEER
Jim Hutson
SENIOR APPLICATIONS DEVELOPERS
Arturo Flores, Blossom Woo, Kayan Wong, Wei Ming Xu
EDITORIAL APPLICATIONS DEVELOPMENT MANAGER
Matthew Newton

FINANCE

SENIOR VP, COO/CFO Vicki Peilen
DIRECTOR, FINANCE
Diane Ryczek-Rae
DIRECTOR, ACCOUNTING
Michelle Reyes
ACCOUNTING ADMINISTRATION
Jason Villeneuve
DIRECTOR, ADVERTISING ACCOUNT SERVICES Kevin Greene
SENIOR MANAGER, FINANCIAL ADVERTISING SERVICES
Diane Hacker
ACCOUNTING COORDINATOR
Von Phompakdee

PHONE:
415/243-0500
FAX:
415/442-1891
E-MAIL:
letters@pcworld.com
WORLD WIDE WEB:
www.pcworld.com
MAIL:
PC World
501 Second St. #600
San Francisco, CA
94107

PC World is a business unit of International Data Group (IDG). Headquartered in Boston, IDG is the world's leading technology media, research and event company, with annual revenues of $3.01 billion. IDG publishes more than 300 newspapers and magazines in 85 countries, led by the *Computerworld/InfoWorld, Macworld, Network World, PC World,* and *Channel World* global product lines. IDG offers online users the largest network of technology-specific sites around the world, with 330 Web sites in 80 countries. IDG is also a leading producer of 168 computer-related expositions in 35 countries, and research arm International Data Corporation (IDC) provides computer industry research and analysis through offices in 43 countries worldwide. Company information is available at www.idg.com.

THE COMPANY: IDG is the world's leading technology media, research and event company. Founded in 1964, IDG had 2001 revenues of $3.01 billion and has more than 12,000 employees worldwide. IDG offers the widest range of media options which reach more than 120 million technology buyers in 85 countries representing 95 percent of worldwide IT spending. IDG's diverse product and services portfolio spans six key areas including: print publishing, online publishing, events and conferences, market research, education and training, and global marketing solutions.

PUBLICATIONS: More than 100 million people read one or more of IDG's 300 magazines and newspapers in 85 countries each month. IDG's five global publication product lines–*Computerworld/InfoWorld, CIO, Macworld, Network World,* and *PC World*–account for more than 175 of these titles, delivering a consistent audience of buyers throughout the world.

ONLINE: IDG's online network includes 330 Web sites in 80 countries, reaching more technology buyers with the broadest network of technology content online. Supported by more than 2000 journalists, IDG's Web sites provide focused, useful content that meets the needs of distinct communities around the world. Diverse advertising opportunities are available to advertisers on IDG's global ad network that offer enhanced web marketing programs including custom webcasts, e-mail newsletters and micronetworks. IDG's online network is also supported by the world's only 24-hour global technology news organization, the IDG News Service, reporting the latest technology news and analysis in multiple languages around the world.

RESEARCH: International Data Corporation (IDC) is the world's leading provider of global marketing intelligence. With research centers in 43 countries and more than 575 research analysts worldwide, IDC is uniquely positioned to provide a global perspective on IT market and technology trends, serving more than 3,900 clients worldwide. IDC is the leading provider of worldwide market research in consumer computing, including personal computing, interactive entertainment, and online services.

EVENTS: IDG is the leading producer of more than 168 globally branded conferences and events in 35 countries. Industry leading international events include LinuxWorld Conference & Expo, Macworld Conference & Expo, and BioITWorld Conference & Expo. Leading conferences include Agenda and Demo, in addition to hosting and creating customized online events and webcasts on ITworld.com. IDG produces 17 conferences and events in China alone, and was first to offer expos in emerging markets throughout Asia, Eastern Europe and Latin America.

GLOBAL SOLUTIONS: IDG Global Solutions helps the industry's leading IT companies build international brand recognition by developing globally integrated marketing programs via IDG's print, online and event products worldwide. IDG's diverse portfolio of global partnership services includes customized research, customized publishing, targeted conferences and seminars, and direct response tools.

Further information about the company can be found at www.idg.com.

INDEX

WWW.PCWORLD.COM

Advertiser	URL	Page number
1&1 Internet Inc.	www.1and1.com	107-138
3COM	www.3com.com/smallbusiness	44
ABS Computer Technologies, Inc.	www.abspc.com	20-21
Acer America Corporation	www.acer.com/us	131-138
Antec Inc.	www.antec-inc.com	145
Anthro Corporation	www.anthro.com	47
AOpen	www.aopen.com	177
BenQ America Corp.	www.BenQ.com	8
Benwin	www.Benwin.com	164
Brother International	www.brother.com	14
Casio	www.casio.com	63
CDW Corporation	www.cdw.com	4-5
CDW Corporation	www.cdw.com	95-98
Digital World	www.pcworld.com/customer	178
EarthLink	www.earthlink.net	153
eBay's PC Selling Center	www.ebay.com/pcsellingcenter	17
eFotoXpress	www.efotoxpress.com	19
Electrovaya	www.electrovaya.com	48
eMachines, Inc.	www.emachines.com	169
Fisher Multimedia	www.fisherav.com	83
Garmin	www.garmin.com	6
IBM	ibm.com/shop/m503	40-43
IOGEAR Inc.	www.iogear.com	102
IPOWERWEB, Inc.	www.ipowerweb.com	24-25
iRiver America, Inc.	www.iriveramerica.com	65
Kingston Technology	www.kingston.com	151
Kodak	www.kodak.com	31
LaCie, Ltd.	www.lacie.com	50
LG Electronics USA Inc	www.lgeus.com	87
Linksys	www.linksys.com	129

Advertiser	URL	Page number
Macromedia Contribute	www.webpublishingsystem.com	67
newegg.com	www.newegg.com	10-11
newegg.com	www.newegg.com	85
Optoma	www.optoma.com	18
palmOne, Inc.	www.palmOne.com	59
PC America	www.pcamerica.com	158
PC World Profiler	www.ebay.com/pcsellingcenter	17
Pinnacle Systems	www.pinnaclesys.com	29
Primera Technology	www.bravopublisher.com	69
Register.com	www.register.com	58
Samsung Electronics America Inc.	www.samsungusa.com/printer	C4-1
Samsung Electronics America Inc.	www.samsungusa.com/monitor	22
Shuttle Computer Group	www.us.shuttle.com	175
Sony VAIO Direct	www.sony.com/smb7	71-74
Sony VAIO Direct	www.sony.com/pc7	C5-C8
T. Rowe Price	www.troweprice.com	53
Toshiba America	www.toshiba.com	2-3
Tripp Lite	www.tripplite.com/promo/pcw	143
Upfront Rewards	www.4myfreedell.com	54
U.S. Robotics	www.usr.com	185
ValueWeb	www.valueweb.com	56
Verbatim	www.verbatim.com	162
ViewSonic Corporation	www.ViewSonic.com	39
Visa	www.visa.com	37
Website Animal	www.WebsiteAnimal.com	16
Xerox	www.xeroxscanners.com	12
Xerox Office Group	www.xerox.com/office/1964	35
XIMETA, Inc.	www.ximetainc.com	160
ZT Group	www.ztgroup.com	33

FAST. FASTER. FASTEST.

U.S. Robotics continues to deliver on the promise of wireless connectivity with the fastest 802.11g on the planet.

125 Mbps Performance

U.S. Robotics means wireless.

FASTER SPEED, BETTER SECURITY, BROADER RANGE, GREATER COMPATIBILITY

Make the most of your Internet connection with the U.S. Robotics 802.11g Wireless Turbo Family:

- Accelerator Plus Technology delivers 125 Mbps performance
- Completely compatible with 802.11b/b+/g products
- 10 times the security of standard wireless solutions
- Provides up to 30% better coverage

Find out more about the fastest wireless networking available at www.usr.com/125

Available at:

CDW · amazon.com · Insight · MICRO CENTER · Fry's Electronics · TigerDirect.com

U.S. Robotics®

Ready. Set. Connect.

STEPHEN MANES

Your Take on Windows' Worst Irritations

WINDOWS ANNOYANCES? Readers, you've seen plenty. Back in the June issue (find.pcworld.com/43828), I mentioned several personal pet peeves and urged you to name yours—in the interest of alerting Jim Allchin, the man in charge of the forthcoming "Longhorn" Windows upgrade.

You responded in force. And in this special annoyances issue, I'm reporting back.

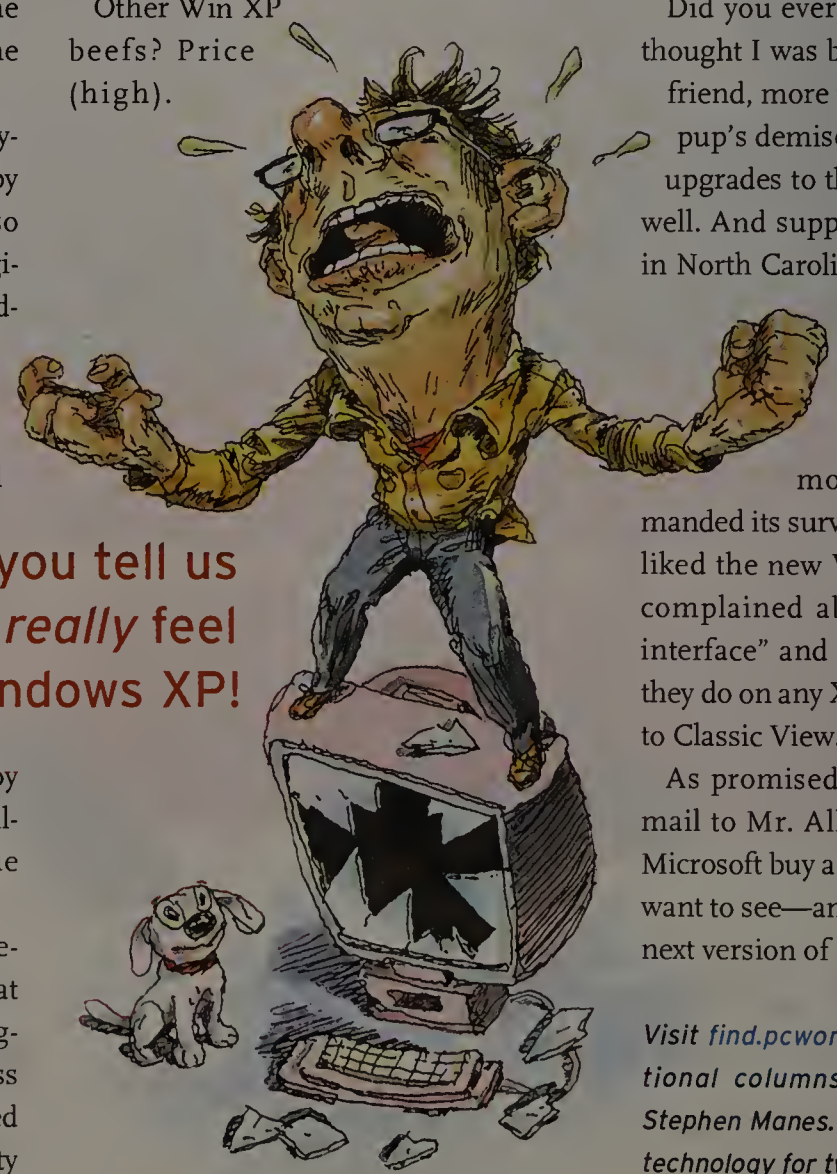
One group of gripes fell in a category I call "Why can't Windows do windows?" How come it forgets the window positions and sizes you like for your favorite programs? How come it insists on displaying icons when you've specified the Details view, or arranging lists by name when you've requested sorting by date?

Of course, insecurity is a huge annoyance. Bob Stearns of Miami says his copy of XP resembles "an inner tube with so many patches and hot fixes that the original rubber is barely visible." Many readers squawked about Windows Update's flakiness and its reliance on the ever-insecure Internet Explorer. Dial-up users urged that patches be smaller, and transferrable via disk from PCs with fast connections. Readers also pointed out missing security measures, such as a system-level way to truly destroy data when "deleting" it. Oh yeah, reliability seems to be missing too; the Blue Screen of Death is not dead.

Other issues stemmed from XP's refusal to give you total control over what gets installed. Readers blasted the Registry, the need to edit it, and the lameness of XP's Regedit tool. All this underpinned another common complaint: the inability to easily move programs, not just settings and files, from an old PC to a new one.

More pointed questions: Why doesn't Windows have a better emergency repair tool? Why aren't the system settings all in one place? Why does each Windows upgrade disable still-serviceable peripherals?

Other Win XP beefs? Price (high). Product activation (obnoxious). Error messages and help (unhelpful).



Boy, did you tell us how you *really* feel about Windows XP!

You also want fewer services enabled by default and faster startup and shutdown. And as Carleton Eastlake of Beverly Hills, California, says, Windows "should tell us when it has actually, honestly, completely finished loading all startup programs."

I also urged you to weigh in on two of my personal gripes: the doggie in XP's search function, and the idea that Longhorn might kill the "Classic" interface that's been around since Windows 95.

Did you ever! Although 16 dog-lovers thought I was being unfair to man's best friend, more than 170 of you urged the pup's demise. Many pushed for major upgrades to the lousy search system as well. And support technician "LanMan" in North Carolina rued being dispatched to help a user who complained that the doggie wouldn't bark.

As for Classic View, more than 700 of you demanded its survival—as opposed to 3 who liked the new Windows XP look. Many complained about XP's "Fisher-Price interface" and noted that the first thing they do on any XP machine is switch back to Classic View. I wholeheartedly agree.

As promised, I'm forwarding all this mail to Mr. Allchin. Maybe it will help Microsoft buy a clue about what real users want to see—and what they don't—in the next version of its product. ■

Visit find.pcworld.com/31595 to see additional columns by Contributing Editor Stephen Manes. He has been writing about technology for two decades.

ILLUSTRATION: JOHN CUNEO

IDG INTERNATIONAL DATA GROUP

Volume 22, number 10. *PC World*™ (ISSN 0737-8939) is published monthly at $24.95 for one year (12 issues), $49.90 for two years (24 issues), $74.85 for three years (36 issues) by PC World Communications, Inc., 501 Second Street #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add $12 per year for Canada; add $30 per year for airmail for all other countries. Canadian GST Registration #R124669680. Periodicals Postage Paid at San Francisco, California, and at additional mailing offices. Canada Post Publications Mail Agreement #2493993. Returns: 4960-2 Walker Road, Windsor ON N9A 6J3. POSTMASTER: Send address changes to *PC World*, Subscription Dept., P.O. Box 37571, Boone, IA 50037-0571. Editorial and business offices: 501 Second St. #600, San Francisco, CA 94107, 415/243-0500. Copyright © 2004, PC World Communications, Inc. All rights reserved. The trademark PC World is owned by International Data Group and used under license by PC World Communications, Inc. Technology Advice You Can Trust™, PC World Top 10™, Top 10™, PC World Top 100™, Top 100™, and Consumer Watch™ are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

Sony recommends Microsoft® Windows® XP.

sony style

Sony® VAIO® R Series Desktop PC with an Intel® Pentium® 4 Processor with HT Technology. Video editing and music-mastering performance doesn't get any better than this. With expandability up to 1.6 terabytes of storage, and innovative design to keep your system running cool and quiet, you'll have the quality and muscle you need for the results you want. Together with VAIO® Creation Suite PLUS software, it's the optimum combination of innovative Sony technologies.

LIKE NO OTHER™

Expert Advice

- Our team of knowledgeable salespeople offers the highest quality service, allowing you to explore every possibility with confidence.
- Chat live with a Sony Style® Online buying assistant, search our solutions database or experience the latest technologies firsthand by visiting a Sony Style® Retail Store.

Customized Sony VAIO® PCs

- Customize any Sony VAIO® PC configuration to meet your specific needs, with the help of a Sony computer expert.
- Maximize your computer's performance with the addition of genuine Sony accessories.

Unsurpassed Choices

- With our extensive collection of everything Sony, you'll have the freedom to search thousands of PC options.
- From computers to digital camcorders to home entertainment systems and everything in between, Sony Style® Online is the best place to find your favorite Sony products.

Easy Leasing and Financing

- Sony VAIO® PCs are as easy to purchase as they are to own, with easy financing and extended service options designed to meet your needs—including accidental damage coverage.[6]

ImageStation.com

- Picture visiting one Web site where you can share your photos via online albums and e-cards, get beautiful, high-quality photo prints and even make unique, fun photo gifts. You'll find it all at ImageStation.com.
- It's FREE to join. Start today and you'll receive 10 FREE prints.[9]

Sony Style® Entertainment

- Sony Style® Online fulfills all of your entertainment needs with tens of thousands of DVDs, CDs, LPs and VHS to choose from. At Sony Style® Online, we know entertainment.
- Enjoy discounts on many of your favorite movies and CDs. With our integrated shopping experience, it's easy to find and purchase exactly what you're looking for.

FREE SHIPPING ON SELECT MODELS[11]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

NO INTEREST, NO PAYMENTS FOR 6 MONTHS[10]
ON ALL PURCHASES OVER $299.99

Sony Style® Retail Stores: Beverly Hills, Boston, Dallas, Detroit, Houston, New York, Orange County, Orlando, Palo Alto and San Francisco

CALL 877-510-SONY (7669)

CLICK sony.com/pc7

VISIT a Sony Style® Retail Store

SONY

Sony® VAIO® Notebook PCs with Intel® Processors not only strike the perfect balance between form and function, but their mobility lets you explore a world of possibilities wherever you are and wherever you're going. With build-to-order versatility, wireless capability and interactivity, now there's no excuse for not living life on your terms.

Sony recommends Microsoft® Windows® XP.

Portable Multimedia Entertainment

A Series

Build-to-Order VGN-A170
- Intel® Pentium® M Processor 735 (1.70AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Home Edition
- 80GB[2] Hard Drive (4200 rpm)
- 17" Widescreen WUXGA (1920x1200) Display with XBRITE™ LCD Technology
- ErgoBright™ Technology with Smart Display Sensor
- 512MB (256MBx2)
- Integrated DVD±RW/CD-RW Drive[4]
- ATI® Mobility™ RADEON™ 9700 Graphics Card
- Integrated Wireless LAN 802.11b/g with Bluetooth® Wireless Technology[7]
- AV Entertainment Dock with Speakers for TV Viewing
- 1-Year Limited Warranty[3]

$2,739.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to an 80GB[2] Hard Drive (5400 rpm) for $100

Available exclusively at Sony Style® Retail Stores and Sony Style® Online. Limited supply!

Compact Design

TR Series

PCG-TR5AP
- Featuring Intel® Centrino™ Mobile Technology
  - Intel® Pentium® M Processor Ultra Low Voltage 733 (1.10 GHz,[1] 2MB L2 Cache)
  - Intel® PRO/Wireless Network Connection 802.11b/g[7]
- Microsoft® Windows® XP Professional
- 40GB[2] Hard Drive
- 10.6" Widescreen XBRITE™ LCD Display
- 1GB[2] RAM
- Integrated DVD-RW/CD-RW Drive[4]
- Battery Life from 2.5 to 5.5 Hours[6]
- Integrated Swivel Camera
- Sleek Design in a 3.11 lb. Light[5] and 1.44" Thin Body
- 1-Year Limited Warranty[3]

$2,999.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Privacy Screen for $79.99
- Sony VAIO® Large-Capacity Lithium Ion Battery[6] for $349.99

Beauty, Power and Performance

S Series

Build-to-Order VGN-S170
- Intel® Pentium® M Processor 735 (1.70GHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Home Edition
- 40GB[2] Hard Drive
- 13.3" WXGA Display
- 256MB RAM
- Integrated CD-RW/DVD-ROM Combo Drive
- Only 4.2 lbs. with Standard Battery[5]
- 1-Year Limited Warranty[3]

$1,849.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to a 60GB[2] Hard Drive for $50
- Integrated Wireless LAN 802.11b/g[7] for $50

Essential Computing

A Series

Build-to-Order VGN-A130
- Intel® Celeron® M Processor 1.40GHz[1] (1MB L2 Cache)
- Microsoft® Windows® XP Home Edition
- 40GB[2] Hard Drive
- 15" XGA TFT Display
- 256MB DDR SDRAM
- Integrated CD-RW/DVD-ROM Combo Drive
- 1-Year Limited Warranty

$1,199.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to a 60GB[2] Hard Drive
- Integrated Wireless LAN 802.11b/g[7] for $50

Performance Art

X505 Series

VGN-X505ZP
- Intel® Pentium® M Processor Ultra Low Voltage 1.10GHz[1]
- Microsoft® Windows® XP Professional
- 20GB[2] Hard Drive
- 10.4" XGA (1024x768) LCD Display
- 512MB RAM (64MB Shared with Video RAM)
- Estimated Battery Life (Standard Battery): 2.0–4.0 Hours[6]
- Amazingly Thin and Extremely Light, Weighing Only 1.85 lbs.[5]
- Nickel-Carbon Body for Ultra-Light Portability
- Includes Microsoft® Office 2003 Basic Edition
- Memory Stick® Mouse Included as a Bonus
- 1-Year Limited Warranty[3]

$2,999.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Extra Sony VAIO® Standard Ion Battery[6] for $299.99
- External DVD±RW Drive[4] 9.99

CALL 877-510-SONY (7669)

CLICK sony.com/pc7

Style® Retail Store

Sony® VAIO® Desktop PCs with Intel® Processors and Sony exclusive preinstalled software couldn't be more entertaining. From burning your own DVDs and recording TV content to managing your music and photos, your recommended daily dose of entertainment comes with the ease and convenience you expect from Sony.

Display sold separately.

Affordability

RS Series

PCV-RS610

- Intel® Pentium® 4 Processor with HT Technology 2.80EGHz[1] (with 1MB L2 Cache)
- Microsoft® Windows® XP Home Edition
- 160GB[2] Hard Drive (7200 rpm)
- 512MB DDR at 400MHz
- DVD±RW/CD-RW and CD-ROM Drives[4]
- Sony Exclusive Software
  - Click to DVD™—for DVD Creation
  - SonicStage® Mastering Studio—for Digital Music Mastering
  - PictureGear Studio™—for Digital Photo Management
- 1-Year Limited Warranty[3]

$100 MAIL-IN REBATE[9]

~~$999.99~~ After $100 mail-in rebate. Rebate offer expires 9/30/04. See www.sonystyle.com for coupon, and complete terms and conditions.

$899.99 No Interest, No Payments for 6 Months.[10]

UPGRADES

- Add the SDM-HS74P/S 17" Flat Panel Display for $599.99

Display sold separately.

Performance

R SERIES

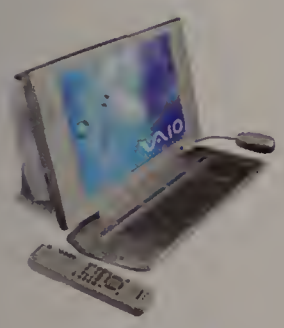
Build-to-Order VGC-RA910G

- Intel® Pentium® 4 Processor 530 Supporting Hyper-Threading Technology (3EGHz,[1] 1MB L2 Cache, 800MHz FSB)
- Microsoft® Windows® XP Media Center Edition 2004
- New Advanced Liquid Cooling System
- 160GB[2] Serial ATA Hard Drive (7200 rpm)
- DVD+R Double-Layer DVD±RW Drive[4]
- 128MB ATI® RADEON™ X600 XT (PCI Express™ 16x) Graphics Card
- Convert VHS to DVD with Giga Pocket® Personal Video Recorder
- Sony Exclusive Software
  - Click to DVD™—for DVD Creation
  - SonicStage® Mastering Studio—for Digital Music Mastering
  - PictureGear Studio™—for Digital Photo Management
- Multimedia Card Reader[14]
- 1-Year Limited Warranty[3]

$1,558.99 No Interest, No Payments for 6 Months.[10]

UPGRADES

- Upgrade to a 1.6 Terabyte Serial ATA Hard Drive (7200 rpm).
- 3-Year Limited Warranty[3] for $199
- Add the SDM-HS74P/B 17" XBRITE™ Flat Panel Display for ~~$599.99~~ $549.99 after $50 mail-in rebate. Rebate offer expires 9/25/04. See www.sonystyle.com for coupon, and complete terms and conditions.



All-in-One

W Series

PCV-W700G

- Intel® Pentium® 4 Processor 2.80GHz[1]
- Microsoft® Windows® XP Home Edition
- 512MB RAM and 200GB[2] Hard Drive
- DVD±RW/CD-RW Drive[4]
- Wireless LAN Card[7] Included
- 1-Year Limited Warranty[3]

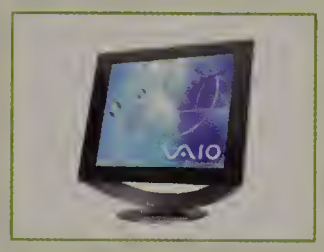
$1,999.99 No Interest, No Payments for 6 Months.[10]

FREE SHIPPING ON SELECT MODELS[11]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

NO INTEREST, NO PAYMENTS FOR 6 MONTHS[10]
ON ALL PURCHASES OVER $299.99

Entertaining Combinations

Surround yourself with more entertaining possibilities. Sony VAIO® computers are designed to look beautiful, and engineered to work beautifully with other Sony products—creating a network of compatible devices that makes it easy for you to enjoy your music, photos and movies.



SDM-HS74P/B 17" Flat Panel LCD Display

$50 MAIL-IN REBATE[9]

- TFT Active Matrix with XBRITE™ Technology
- 17" Viewable Image Size

~~$599.99~~ After $50 mail-in rebate. Rebate offer expires 9/25/04. See www.sonystyle.com for coupon, and complete terms and conditions.

$549.99 No Interest, No Payments for 6 Months.[10]

Combines XBRITE™ technology—the Sony standard in picture quality—with brilliant images, sharp text and eye-dazzling colors. Innovative floating-frame design complements any room in your home.

DCR-PC109 MiniDV Handycam® Camcorder

- 1.0 Megapixel Advanced HAD™ CCD Imager
- Professional-Quality Carl Zeiss® Vario-Tessar® Lens
- 10X Optical/120X Precision Digital Zoom
- Handycam® Station Included (Pictured)

$899.99 No Interest, No Payments for 6 Months.[10]

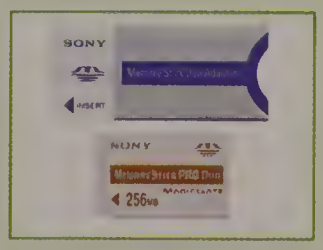
Compact and feature-rich, it's the perfect camcorder for people who demand quality and convenience.

NW-HD1 Network Walkman™ Digital Music Player

- 20GB[2] Hard Drive Digital Music Player
- G-Sensor™ Shock Protection Provides Impact Protection
- Up to 30 Hours Playback with Built-In Rechargeable Battery[13]

$399.95 No Interest, No Payments for 6 Months.[10]

The NW-HD1 is compatible with the Sony Connect™ Online Music Store. It plays back in ATRAC3™ or ATRAC3plus™ audio format and supports the most popular Internet audio formats, including MP3, WMA and WAV.[17]



MSX-M256A Memory Stick PRO Duo™ Media[11]

- 256MB of Storage (220MB Usable)
- Compatible with Standard-Size Memory Stick® Slot Media Using Included Adapter

$94.99

The Sony Memory Stick PRO Duo™ media is designed to easily store, transfer and share photos, music, presentations and more. Ideal for use in small digital devices.

SONY

More than you'd expect from a PC. Exactly what you'd expect from Sony.

Sony recommends Microsoft® Windows® XP.

Sony VAIO® A170 Notebook PC with XBRITE™ LCD Technology

Sony® VAIO® notebooks and desktops with all the power and innovation you expect from Sony. They fit perfectly into your lifestyle. And best of all, Sony VAIO® PCs are designed to work with other high-quality Sony products and accessories. So listen to your favorite music. Edit digital photos and digital video. Watch television or enjoy a movie on DVD. The possibilities are as endless as your imagination.

Sony VAIO® Notebooks feature Intel® Centrino™ Mobile Technology.

intel inside centrino™ MOBILE TECHNOLOGY

CALL 877-510-SONY (7669) **CLICK** sony.com/pc7 **VISIT** a Sony Style® Retail Store

FROM THE EDITORS OF PC WORLD

Premiere Issue!

60+ Seriously Entertaining Products Inside

Digital World

TECHNOLOGY THAT POWERS YOUR LIFE

HDTV FACE-OFF

WE LAB TEST THE BEST

CAMERA PHONE PHOTOS

THAT DAZZLE (REALLY!)

HOME THEATER HOOKUPS UNTANGLED

MOVIE MAGIC

ON THE CHEAP

DIGITAL MUSIC

THE ULTIMATE GUIDE

OCTOBER 2004
WWW.DIGITAL-WORLD.COM

Sculpted by Samsung.

Available at: BEST BUY SEARS Where else? P.C. RICHARD MyerEmco AudioVideo OVATION THE AUDIO/VIDEO SPECIALISTS

©2004 Samsung Electronics America, Inc. DLP is a trademark of Texas Instruments.

Introducing the pedestal DLP™ TV that truly stands alone.
Designed to make a bold statement in any room, it uses our Cinema Smooth Light Engine™ to deliver ultra-sharp, high definition images that hover beautifully above an integrated pedestal base. So, wherever you decide to place it, it's sure to offer an experience as original as the thinking that inspired it. **www.samsungusa.com/dlp**

SAMSUNG

TOSHIBA RECOMMENDS MICROSOFT® WINDOWS® XP.

PERSONAL COMPUTER

LCD TV WITH TRUBRITE™ DISPLAY

DIGITAL VIDEO RECORDER[1]

VIRTUAL SURROUND SOUND

1 Copy protection technology activated in certain media may prevent or limit recording or viewing of the media. Qosmio and TruBrite are trademarks of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel, Intel Inside, the Intel Inside logo, Pentium, Centrino, and the Intel Centrino logo are trademarks or registered trademarks of Intel Corporation.

YOU'VE NEVER SEEN OR HEARD ANYTHING LIKE THE QOSMIO™ AV NOTEBOOK PC – a revolution in portable AV entertainment and computing complete with Intel® Centrino™ Mobile Technology. Now you can surf, game, watch DVDs, listen to music, record your favorite shows and watch them anyplace, anytime. All with a screen brightness and sound quality that you seriously won't believe. Take your fun wherever life takes you. Explore more at qosmio.com.

TOSHIBA

or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners. Product Specifications, configurations, prices, system/component/options, availability subject to change without notice. Read all product specifications and disclaimers at qosmio.com. © 2004 Toshiba America Information Systems, Inc. All rights reserved.

Having a baby is labor enough.
Making a movie of his first year
shouldn't have to be.

Introducing Pinnacle Studio™ Plus. You've done the hard part—had the baby and shot the video. Now comes the easy part: putting all those memorable moments together. That's because Pinnacle Studio Plus has taken all the guesswork out of home editing and delivered a simple, powerful tool that will have you making movies within minutes. It really is that easy. And it can work with a digital or analog camera. And when you're finished, just use the Studio Plus DVD maker to burn a masterpiece that's ready to be shared with the world. Little wonder Pinnacle is the leader when it comes to home video editing solutions. And to make things even easier, we've created a step-by-step guide you can download and follow when it's time to make that all-important birthday party video. The only thing you'll have to figure out is when to have your premiere. To learn how to make a great birthday video of your own and to download a valuable Pinnacle Studio Plus coupon, visit www.StudioHowTo.com/2

PINNACLE® SYSTEMS

©2004 Pinnacle Systems, Inc. All Rights Reserved. Pinnacle Systems and Pinnacle Studio are registered trademarks or trademarks of Pinnacle Systems, Inc. in the United States and other countries. Photo: Howard Schatz.

56

50

20

WWW.DIGITAL-WORLD.COM

DigitalWorld
TECHNOLOGY THAT POWERS YOUR LIFE

FEATURES

CENTER | BIG HDTVs

26 Screen Tests
Your TV can never be too thin or too beautiful. We review jaw-dropping plasma and DLP high-definition models and offer a guide to help you get set up for HD programming.

| DIGITAL MUSIC

44 Digital Music Here, There, and Everywhere
Learn how to get digital music, how to manage all those tunes, and where to find the tools to perfect what you play.

| MOVIEMAKING

61 Spielbergs on a Shoestring
So all you have is a credit card and a dream? You too can be an auteur. Three independent filmmakers reveal how they use low-cost digital equipment to make movie magic.

| CAMERA PHONES

71 Popular Phonetography
Camera-phone snapshots don't have to look dreadful. These tips and techniques will give your camera shots some well-earned respect.

DEPARTMENTS

6 **Editor's Letter**

11 **Digital Input**

24 **Descrambler**
We make sense of cable confusion.

12 **Seen/Heard/Tried**
Check out our tests of the coolest, newest gadgets and gear.

78 **Tech at Home**
Recording HD broadcasts sounds like a great idea. Then reality hits.

83 **Gear to Go**
Portable video players let you watch movies and TV wherever you go. But do you want to?

87 **Skeptical Shopper**
Are online prices as low as they could be? We investigate.

88 **Bonus Material**
Now appearing on HDTV: Aerosmith's age spots.

"It makes you wonder if Gutenberg had to fend off wild-eyed monks screaming about printing-rights management."

—TECH AT HOME, PAGE 78

OCTOBER 2004 VOLUME 01 ISSUE 01

PHOTOGRAPHS: KEVIN CANDLAND (LEFT AND CENTER); MARC SIMON (RIGHT)

Cover: Photographs by Rick Rizner and Marc Simon

Digital Changes Everything

New technologies. New choices. And a new guide to making the most of it all. BY HARRY McCRACKEN

TECHNOLOGY AND ENTERTAINMENT. They've been friends—really good friends—since Thomas Edison's first phonograph squawked out "Mary Had a Little Lamb" back in 1877. The hits have kept coming ever since. Radio. Movies and TV. Video games, the VCR, and CDs.

Not every would-be entertainment breakthrough is a keeper. (Anybody out there pine for 8-track? Smell-O-Vision?) Still, we've come to expect that technology will keep reinventing the way we amuse ourselves. What's different now is that *everything is changing at once.* And this shift is happening for one profoundly simple, simply profound reason: Everything is becoming digital.

The evidence abounds. Audio? With music downloads already nudging the CD toward oblivion, it's not only gone digital, it's gone virtual. Video? Increasingly digital, courtesy of HDTV, digital video recorders, and DVD recorders, with more on the way. Even the great American car is transforming itself into a digital device that does DVD, MP3, and GPS.

But what's really revolutionary is the way technology products are starting to talk to their brethren via the Internet, cellphone and satellite signals, and home networks. Suddenly computers, consumer electronics, and mobile devices merge into one technological domain...one with infinite possibilities and more than a few potential pitfalls.

IN PRINT (top) and online, we advise you on what to buy and how to make it all work.

You could call it a whole new digital world. And it's why, starting now, there's *Digital World.*

If you're determined to get the most from this revolution, you're our kind of people—and this is your kind of publication. We intend to be trusty advisers on what to buy, where to get it, and how to make it work together.

Making sense of technology is in our bones: We're the editors of *PC World,* which has been doing exactly that since 1983. But we promise to check any biases towards PC-based products at the *Digital World* door. We'll give a fair shake to both Windows and Mac stuff, as well as to an array of digital gear with no computer-centric angle whatsoever.

Covering entertainment products is actually serious business, at least if you're going to do it right. So we've just upgraded our Test Center to evaluate consumer electronics such as the big plasma and rear-projection HDTVs we rate in "Screen Tests" on page 26. (For a virtual tour of the Test Center, flip to page 11.)

DW's five-star rating scale, cheerfully swiped from *PC World,* will provide the bottom line on products. We'll also report on emerging trends. When the 21st-century equivalents of 8-track and Smell-O-Vision arrive, we'll sound the alarms.

We want *Digital World* to be your world. Help us shape it by taking our survey at www.digital-world.com/survey, and you'll get a shot at winning a 30-inch LCD TV from BenQ. And stop by our Web site (www.digital-world.com) for additional news, reviews, and buying guides. The digital revolution waits for no dead-tree publication—and so neither will we. ■

Harry McCracken, editor in chief of PC World, *also heads up the* DW *editorial team.*

THIS DIGITAL WORLD: MEET OUR SHOPPING MAVEN

WE KNEW FROM THE START that *Digital World* would need a hype-busting shopping columnist. And one name came to mind in milliseconds: Roberta Furger, the award-winning reporter who wrote *PC World's Consumer Watch* for years.

In *Skeptical Shopper* Roberta will take an obsessively consumerist stance on topics from store policies to copy protection. "Amidst the cool gadgets and technologies," she says, "it's easy to forget about the hidden gotchas."

Consider her your personal gotcha-watcher—and see page 87 for her look at "minimum advertised price" mysteries.

PHOTOGRAPH: MICHAEL KERSHNER

OptomaHDTV

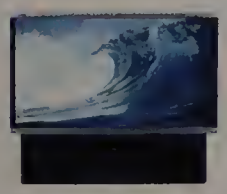
High Definition | **redefined**.

Award winning Optoma DLP™ HDTV Series delivers a 1280 x 720, widescreen DVI pure digital image. Unmatched 1% overscan allows you to watch the full image from either computer or video source. Extra wide viewing angle and a 16:9 non-reflective screen means richer blacks with no image burn-in, fading, or degradation. Optoma Plasma Series offers a full 50" screen with an incredible 3000:1 contrast ratio and a resolution of 1,366 x 768 addressable pixels. The crisp image makes you feel you are part of the scene.

*"**The Optoma RD50/RD65** delivered outstanding image and picture quality for both computer and video applications to capture the 2004 Displaymate Best Video Hardware Guide™ Five-Star Award for the **best large screen High Definition Television Display available today.**" **Dr. Raymond Soneira, President of DisplayMate Technologies.***

Optoma **www.optomatv.com**

Optoma has an HDTV Solution that's just right for YOU.


65" DLP Series

50" DLP Series

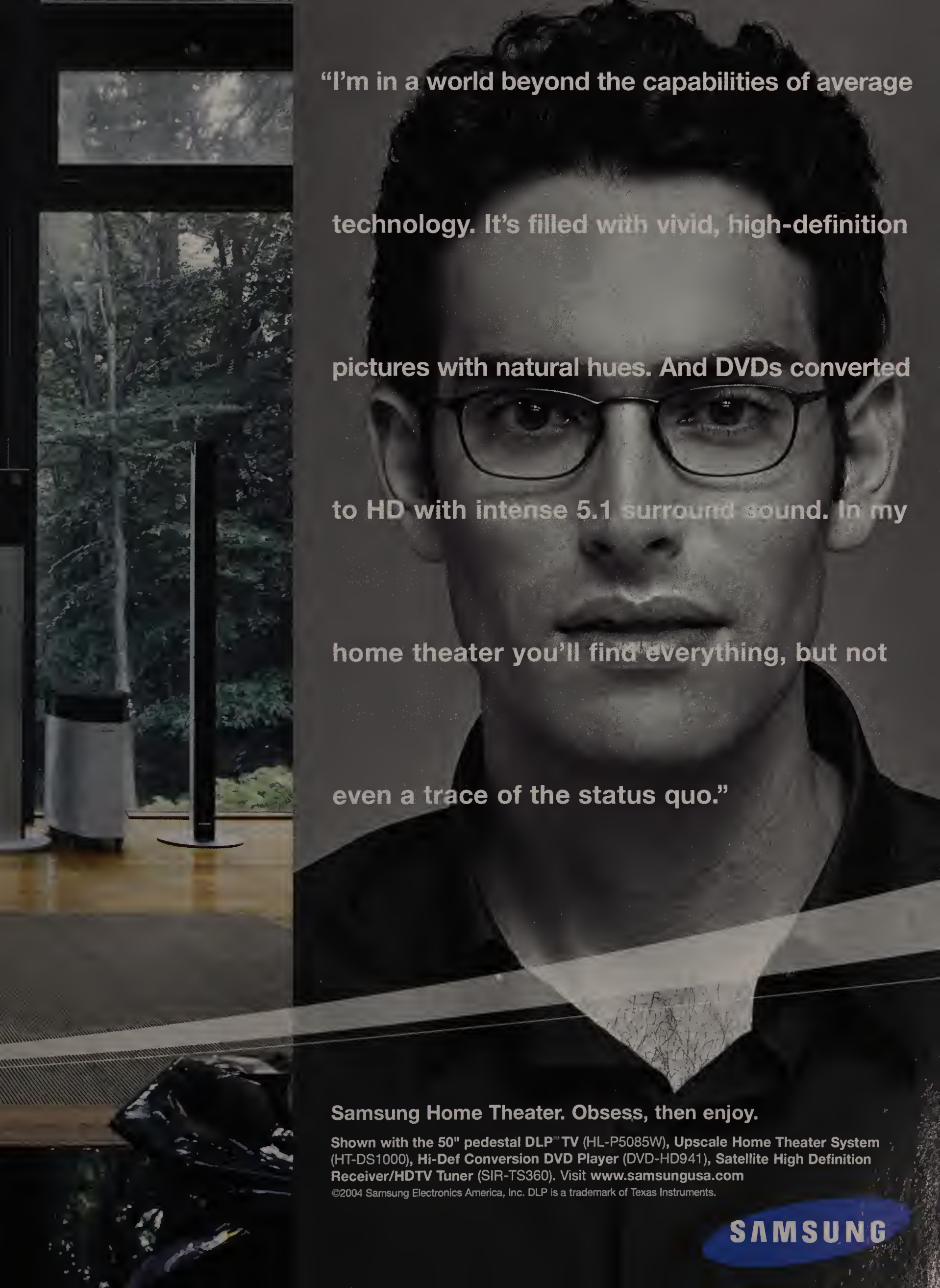
50" Plasma Series

2004 ★★★★★ Award
BEST DISPLAYMate™
VIDEO HARDWARE GUIDE

2003 INNOVATIONS

© 2004 Optoma Technology, Inc. DLP ™ and the DLP™ medallion are trademarks of Texas Instruments.

SAMSUNG


"I'm in a world beyond the capabilities of average technology. It's filled with vivid, high-definition pictures with natural hues. And DVDs converted to HD with intense 5.1 surround sound. In my home theater you'll find everything, but not even a trace of the status quo."
Samsung Home Theater. Obsess, then enjoy.
Shown with the 50" pedestal DLP™ TV (HL-P5085W), Upscale Home Theater System (HT-DS1000), Hi-Def Conversion DVD Player (DVD-HD941), Satellite High Definition Receiver/HDTV Tuner (SIR-TS360). Visit www.samsungusa.com
©2004 Samsung Electronics America, Inc. DLP is a trademark of Texas Instruments.
SAMSUNG

BenQ.
Increase your viewing pleasure.

DV3070 LCD TV

- **16ms response time** for super-fluid motion
- **Ultra-high 500:1 contrast** for amazing detail
- **WXGA** (1280 x 768) for superior resolution
- **30"** extra-large screen

$100
MAIL-IN REBATE*
OFFER ENDS
12-31-04

PB6210 DLP PROJECTOR

- **XGA** for highest-quality resolution
- **2000:1** contrast ratio for ultra-sharp images
- **2000 lumens** for superior brightness and clarity
- **Up to 3000** hour lamp life
- **1 year** QXchange Service
- **3 year** Limited Warranty

Theatre-like quality in the comfort of your own home.

Whether you're indulging in movies, sports, or video games, images will come to life in amazing detail with BenQ's high-quality, high-value display products. Get the PB6210 projector with the DLP chipset for life-like images that won't fade or degrade over time, or the sleek and stylish DV3070 LCD TV with super-fast 16ms response time for fluid motion and clarity. Enjoy the benefits of staying in for the evening. Call 1-866-700-2367 or go to www.BenQ.com.

Come visit us at 2005 CES Booth #20212

BenQ
Enjoyment Matters

© 2004 BenQ America Corp. All rights reserved. All trademarks & registered trademarks are the property of their respective holders. Specifications and promos are subject to change without notice.
*$100 mail-in-rebate is valid on new products only. Purchase of refurbished products do not apply. Offer valid from 11/1/04 - 12/31/04.

Digital World
TECHNOLOGY THAT POWERS YOUR LIFE

FROM THE EDITORS OF PC WORLD

EDITOR IN CHIEF Harry McCracken
CREATIVE DIRECTOR Robert Kanes
EDITOR, PCWORLD.COM Ramon McLeod
MANAGING EDITOR Kimberly Brinson
EXECUTIVE EDITORS Edward N. Albro, Tracey Capen, Randy Ross
TEST CENTER DIRECTOR Ulrike Diehlmann

DIGITAL WORLD
EXECUTIVE EDITOR Alan Stafford
DEPUTY ART DIRECTOR Barbara Adamson
CONTRIBUTING NEWS EDITOR Cathy Lu
SENIOR ASSOCIATE EDITOR, ONLINE Kalpana Ettenson
CONTRIBUTING EDITORS Michael Desmond, Roberta Furger, James A. Martin

FOR THIS ISSUE
EDITORS Yardena Arar, Eric Dahl, Anush Yegyazarian
COPY EDITORS Lindsey Crittenden, Barbara Lewis
ART & DESIGN Jeff Berlin, Kate Godfrey, Pierre Granier, Beth Kamoroff, Carolyn Perot, Henry Pham, Rick Rizner, Greg Silva, Marlene Tobias
TEST CENTER Julio C. Giannobile, Elliott S. Kirschling, Jeffrey Kuta, Tony K. Leung, Thomas Luong, James Motch, Chen Xing Wang, Julian Weatherby
DESIGN CONSULTANT Don Morris Design

PCW COMMUNICATIONS
PRESIDENT, CEO Jeff Edman
PUBLISHER Bob Ostrow
SENIOR VP/CFO Vicki Peilen
VP, HUMAN RESOURCES Kate Coldwell
VP, CONSUMER MARKETING Shawne Burke Pecar

HOW TO CONTACT US
PHONE 415/243-0500
FAX 415/442-1891
E-MAIL letters@digital-world.com
MAIL Digital World Editorial
501 Second St. #600
San Francisco, CA 94107

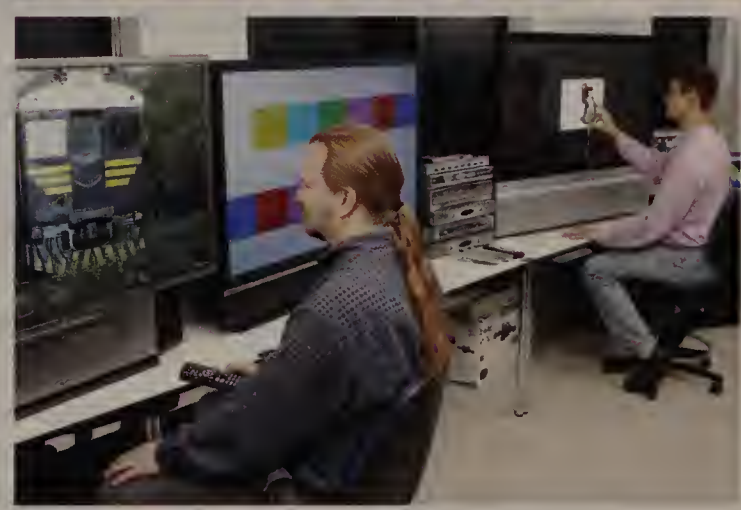
DIGITAL WORLD ONLINE
Visit www.digital-world.com for additional news, reviews, and buying guides.

THE FINE PRINT
IDG INTERNATIONAL DATA GROUP
DIGITAL WORLD is published by PC World Communications, Inc. Editorial and business offices: 501 Second St., #600, San Francisco, CA 94107, 415/243-0500. Copyright © 2004, PC World Communications, Inc. All rights reserved. The trademarks PC World and Digital World are owned by International Data Group, Inc. and used under license by PC World Communications, Inc. Printed in the United States.

The DW Test Center Inside our new setup for in-depth lab testing. BY ALAN STAFFORD

STRANGELY ENOUGH, we didn't get any letters from readers in time for this, our first letters section. So we asked ourselves a leading question: How are we supposed to compare TVs, DVD players, cell phones, or any of the vast array of electronica on the market today? When you're shopping for a television, you can watch sets until your eyes cross, but you still can't be 100 percent sure the one you buy will look good once you get it home.

That's why we evaluate products in a controlled environment—one in which we can eliminate outside interference and variables and compare items on a level playing field. And, for *Digital World,* we expanded the PC World Test Center, which now covers more than 5000 square feet, so we can perform the special tests required to assess consumer electronics devices.



A STAFF MEMBER tries out our new digital living room, at top. Our analysts calibrate TVs prior to judging.

LIVING IT UP

FOR EXAMPLE, to appraise big-screen HDTVs this month (and in future issues), we built a large, new testing room. We calibrated the TVs using sophisticated new equipment, and we recorded HD content for playback in front of a panel of judges. These efforts should give us reliable, repeatable, relevant results (that's a Test Center mantra).

Of course, you don't always get a true impression of a product from lab testing alone, so we also constructed our own living room. Here, we can try out products in their natural habitat to get a better idea of how easy—or not—they are to set up and use. Feet off the coffee table, please.

All of this dedicated effort goes toward one goal: To give you insightful, in-depth evaluations—and information you can't get from a trip to the mall. ■

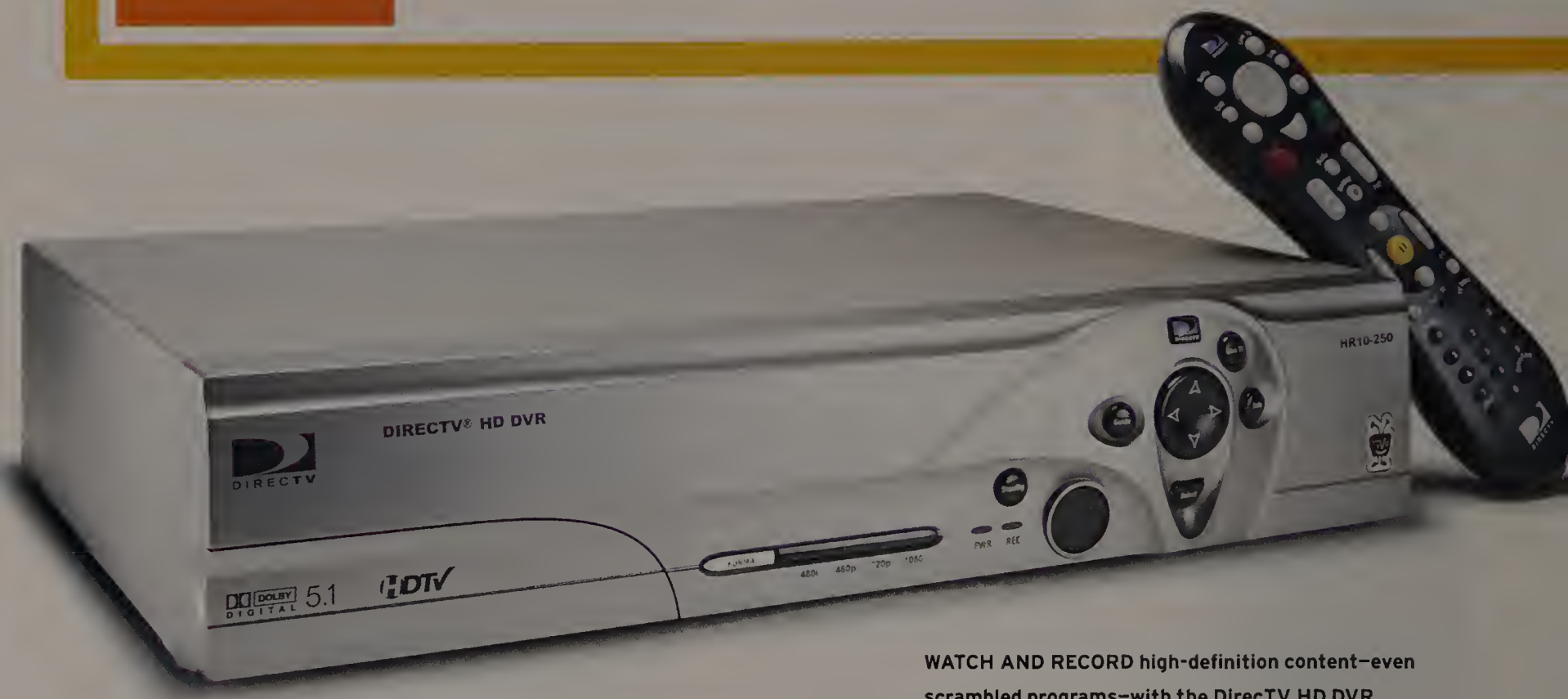
Alan Stafford is executive editor of Digital World.

HOW TO CONTACT US

Digital World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@digital-world.com

PHOTOGRAPHS: ROBERT CARDIN

Seen / Heard / Tried



WATCH AND RECORD high-definition content—even scrambled programs—with the DirecTV HD DVR.

The Best Things in Life Are HD

WHO NEEDS human companionship? I don't, now that I can receive, watch, and record high-definition television programs with one box.

PREMIUM HD

THAT BOX is the $1000 **DirecTV HD DVR**, which contains four tuners (with two satellite and two antenna connections for over-the-air digital TV) and a built-in DVR with TiVo. Multiple tuners means you can record two HD shows at once (including premium, scrambled content like *The Sopranos*)—*and* watch another, prerecorded show simultaneously. Sweet! The 250GB hard drive holds about 30 hours of HD programming or 200 hours of standard-def. The only bummer is the general lack of great HD content—there are only so many times I can watch a lemur preen on Discovery HD. But receiving and recording HBO movies in HD is pretty darn cool.

The device lets you switch between 480i, 480p, 720p, and 1080i resolutions. The box even does an admirable job of turning regular, unappealing 480i into a crisp 480p image. The remote looks just like TiVo's and includes a handy button for switching between wide- and full-screen modes.

The device seamlessly integrates digital over-the-air channels and satellite channels for smooth surfing. DirecTV's eight current HD channels are all grouped together for easy locating.

In fact, the only problem I experienced was sluggish performance of the on-screen guide and TiVo menu (DirecTV says it is aware of the problem and that it is working on improvements). Also, the box isn't particularly attractive, but that's just nit-picking at this point.

COSTLY SOLUTION

THE DIRECTV HD DVR ain't cheap. Plus there's the cost of service and installation (which varies, depending on your setup). The best package—all channels, HD content, and TiVo service—will run about $100 a month. Cut out 20 Starbucks Venti Frappuccinos per month, and you're set.

Cost aside, the DirecTV HD DVR is the best way that I've found to watch and record HD—and learn a thing or two about the Madagascar spotted lemur in the process.

–Cathy Lu

HD RECEIVER AND DVR

DirecTV HD DVR HR10-250

★★★★½

DW VERDICT: A godsend if you want to TiVo high-def content.

PRICE: $1000

dwfind.com/43620

U.S. CITY THAT'S LEAST READY FOR HDTV: LAS VEGAS.

—AMAZON.COM HDTV SALES

PHOTOGRAPHS: MARC SIMON; (TOP RIGHT): CHAPMAN BAEHLER/2004

THE REASONS BEHIND THE RATINGS The Test Center logo indicates products that have been lab-tested; our five-point star rating system boils down an evaluation to a single overall assessment. Look for the star ratings throughout *Digital World*:

★★★★★	★★★★☆	★★★☆☆	★★☆☆☆	★☆☆☆☆
Practically perfect	Pretty darn good	Okay, but just okay	Not so hot	Just plain awful

CableCards Let You Lose Your Cable Box

BOXES, BOXES, boxes—ugh. Between your digital cable box, DVD player, home theater tuner, digital video recorder, and trusty old VCR, it's difficult to keep a home entertainment center looking sleek. Some newer TVs have special slots that let digital cable subscribers eliminate a box—but you may not want to chuck your cable box just yet.

HOW THEY WORK

THE SIZE of a credit card but slightly thicker, a CableCard slides into a special slot in a CableCard-ready TV and handles authentication and decoding functions.

Since July 1, under an agreement between the consumer electronics and cable industries and the FCC, cable providers must offer CableCards to customers who request them for use with the CableCard-ready sets that are already available or about to hit the market.

CableCards can save you a few bucks: Monthly card-rental fees hover in the $2 vicinity, compared to $5 to $13 for digital set-top boxes. So what's not to like?

The big flaw is that today's CableCards are not capable of two-way communications: They can receive instructions but cannot make requests or send information. That means you can't enjoy interactive services: no video on demand, pay-per-view programming, or interactive program guide.

If you're using a TiVo or ReplayTV DVR, you might not be pleased: The IR blaster technology that these boxes use with digital set-top boxes (it allows the DVR to change channels according to your recording requests) may not work with your CableCard set.

At press time, TiVo officials said they were talking to TV manufacturers to figure out which sets can work with existing TiVos. Keep an eye on TiVo's Web site for updates.

A FIX IN SIGHT

COMPANIES such as Motorola are already developing CableCard-ready video recorders, and while neither TiVo nor ReplayTV would comment, it's likely they'll follow suit. At least one cable operator, Insight, is offering a free CableCard to customers who pay $12.95 a month for its combination high-def set-top box/DVR. This two-decoder setup lets you record one live show on your DVR while watching another live show via the CableCard.

If you're thinking of buying a CableCard-ready TV now in anticipation of the time when two-way cards become available, think again. CableLabs, which developed the CableCard spec, says today's CableCard sets will not be compatible with those cards. And no one is speculating on when two-way cards will happen.

—*Yardena Arar*

THE WALLFLOWERS GO DIGITAL

THE WALLFLOWERS love tech toys, as keyboardist Rami Jaffee reveals. For more on the band, visit dwfind.com/43758.

Favorite gadgets: IPods, Xbox, Panasonic SV-AV20 media player, Canon PowerShot A70

Most-techie band member: Rami Jaffee, aka Gadget Boy

Least-techie band member: Jakob Dylan. "Jakob just barely got a cell phone yesterday."

Current studio diversion: "Everyone's addicted to this game called Halo. We might just have to call the record *Halo*."

—*Narasu Rebbapragada*

CABLECARD PRIMER

What it is: A card that slides into a TV and acts as a digital cable decoder.

What it does: Replaces your digital cable set-top box.

Where you get one: Your cable provider.

What you need: A CableCard-ready TV.

DVD Player Ups Resolution

THE **Bravo D2** aims to solve an annoying problem: DVDs can't take advantage of HD television sets' higher resolution (because digital video discs provide only standard-definition video).

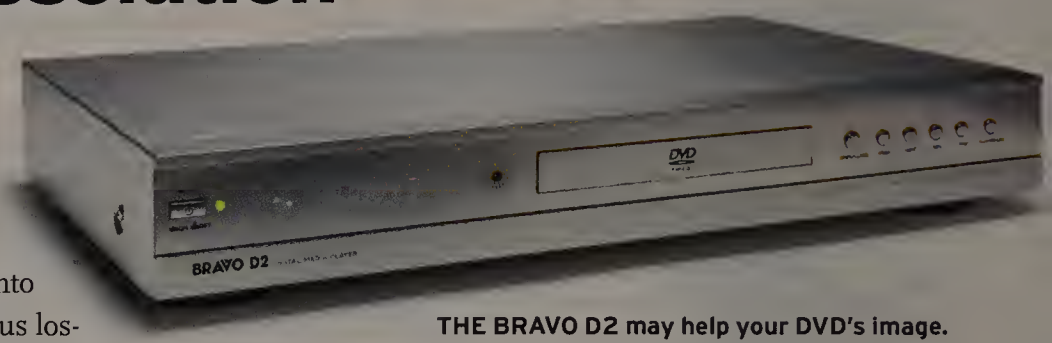
The $249 Bravo DVD player does two things to boost DVD image quality on a high-definition television. First, it can connect to DVI-equipped high-def sets, which prevents the digital video from being converted into an analog signal and thus losing picture quality. Second, the Bravo can upscale 480i DVD video to any HD resolution your TV supports. (But it doesn't add resolution; it just makes the most of the disc.)

I used the Bravo D2 to watch *The Matrix Revolutions*, *Cold Mountain*, and *Master and Commander* on two HD sets (a 42-inch Sony LCD and a 65-inch JVC rear-projection set). I compared the Bravo's performance to that of three analog DVD players that used component connections to the same TVs. While the Bravo produced sharp images, image quality didn't seem appreciably better than with the other players. However, on a third HD set (a 50-inch Samsung plasma), the Bravo delivered a sharper picture—although the difference wasn't dramatic.

Why the variation in results? According to V Inc., the Bravo's manufacturer, some DVI-equipped HD sets still convert a digital signal to analog. And there's no way to find out whether your TV does this before buying. Great.

The slick-looking Bravo also plays many other digital media formats, including discs containing MP3s and MPEG-4 video. But for boosting your high-definition set's picture quality, it's hit or miss.

—*Helmut Kobler*



THE BRAVO D2 may help your DVD's image.

DVD PLAYER

V Inc. Bravo D2

★★★½

DW VERDICT: Sharper picture—but only on some HD sets.

PRICE: $249

dwfind.com/43622

THEN AND NOW

REMOTE CONTROLS

Then: The Zenith Space Commander •Released in 1956 •Used gee-whiz ultrasonic wireless technology •Had 2 or 4 buttons

Now: Logitech's Harmony 676 •Released in 2004 • Weighs 5.8 ounces•Uses infrared wireless technology •Has 51 buttons

—*Narasu Rebbapragada*

In the Pipeline...

Sony Plays IPod Catch Up

Finally, Sony has introduced two hard-drive–based music players. The **NW-HD1 Network Walkman Digital Music Player** ($400) features a 20GB hard drive; Sony claims up to 30 hours of battery life. The Vaio Pocket VGF-AP1L ($500) has a 40GB drive, a color display, and a claimed 20 hours of battery life. It's available about now. Note: They play only the proprietary ATRAC3 format; you must use the included software to convert from MP3, WMA, and other formats. dwfind.com/43628

HP Unleashes Ipaq Phone

Hewlett-Packard's new Ipaq handhelds include the **Pocket PC H315** phone ($500 with T-Mobile activation). The H315 has GSM/GPRS cellular, Wi-Fi, and Bluetooth wireless capabilities, in addition to a built-in camera and a removable keyboard. dwfind.com/43630

HP's LATEST Ipaq takes calls.

Mobile Entertainment

Toshiba's **Qosmio E15-S** (about $2300, well-equipped) is an 8-pound portable television/DVD player—and a Windows laptop to boot. Watch TV on the integrated tuner, or export DVD playback to an external set via the notebook's component outputs, all without booting the Media Center OS; 15.4-inch and 17-inch models are due in October. dwfind.com/43752

Get Unlost With Cheap GPS

Microsoft's **Streets & Trips 2005 With GPS Locator** ($129), available about now, adds a GPS hardware module to the mapping software. The module connects to a laptop via USB or to a Pocket PC or smart phone via an optional sled. dwfind.com/43754

PHOTOGRAPH (TOP): MARC SIMON

Sizing Up Mini Audio Players

AGAINST Apple's Goliath IPod come the digital-music versions of David: miniature players that compensate for lower capacity by delivering greater portability and designs that are even more head-turning.

At $150 and $100 respectively, the 256MB **Yepp YP-T5V** and 128MB **Joybee 102R** (you can get 128MB and 256MB versions of both) cost less than the IPod Mini but also hold less music—about 20 or 30 4-minute songs per 128MB.

The Joybee recharges when connected to your computer via USB 2.0; the Samsung (also USB 2.0) takes one AAA battery. Both last about 10 hours, but I'd rather spend the money on batteries, because if the Joybee runs out of juice, you have to plug it in and wait.

BenQ's QMusic and Samsung's Yepp Studio proprietary software are far from user-friendly when it comes to transferring files from computer to player. Instead I used Apple's free ITunes and Windows to drag-and-drop files on the players.

With the Joybee, I found its lack of an LCD screen frustrating—you have no idea which song is playing or how much juice is left. It has two identically shaped buttons for all functions, and they're easy to confuse with one another unless you look at the markings—not very treadmill-friendly. The sound on the preproduction unit I used was great, but the headphones fell off regularly when I was jogging; because the headphone jack doubles as a USB port, you can't substitute a different pair.

The Samsung's display shows song title, battery life, and other vitals. Its main joystick controller makes it easy to navigate through songs or change volume. The cool MP3 encoding feature allows you to plug the player into a CD player's headphone jack and record songs at very high digital-sound quality.

Does David have a chance against Goliath for those who don't need 1000 songs at all times? With the Joybee, I'd say no. With the Samsung, I'd say Yepp.

—*Sam Jemielity*

SAMSUNG'S YEPP is a great little lipstick-size player.

THE JOYBEE may be tiny, but it's also small on talent. No LCD screen means no song information.

MP3 PLAYER

BenQ Joybee 102R 128MB Digital Audio Player

★★

DW VERDICT: All style and no substance.

PRICE: $100

dwfind.com/43760

Samsung Yepp YP-T5V 256MB

★★★★

DW VERDICT: Plays bigger than it really is.

PRICE: $150

dwfind.com/43762

TALK OF TOKYO JAPAN'S HOT STUFF

PANASONIC DMR-E700BD

What it is: Blu-ray optical disc recorder.

Why we want it: The DMR-E700BD can record high-def TV at full resolution onto Blu-ray discs, with no loss of quality. It's the second Blu-ray recorder on the market and the first to support 50GB dual-layer discs.

When we'll see it: Panasonic hasn't announced plans to release it outside Japan—yet.

HIGH-DEF on Blu-ray discs.

CASIO A5406CA

What it is: First 3-megapixel camera phone.

Why we want it: Did we mention 3-megapixel camera? Plus, it comes with GPS, video recording, a MiniSD memory card slot, a 320-by-240-pixel (QVGA) screen, and Java support.

When we'll see it: No immediate plans to launch it in the United States, says Casio.

Casio A5406CA

TOSHIBA FUEL CELL

Toshiba has what it says is the world's smallest direct methanol fuel cell (DMFC). According to the company, its DMFC can power an MP3 player for 20 hours on 2 cc's of methanol (you'd carry around a small recharging bottle, something similar to a cigarette lighter refill). Look for portable gadgets using it and other fuel-cell technology beginning sometime next year—most likely in Japan first.

—*Martyn Williams*

PHOTOGRAPHS (TOP): MARC SIMON

A DVR That Does More

DVD RECORDER OR DVR? This svelte DVD recorder has DVR-like functions.

IF YOU'RE looking to progress beyond a VCR, the **Pioneer DVR-320-S** is a solid choice.

This DVD recorder supports DVD-Video, DVD-R/W, CD, VCD, CD-R/W, MP3, WMA, and JPEG playback. It also incorporates some talents from the realm of digital video recorders. Chase Play mode lets you start watching a show that's already being recorded—so the end of *CSI* doesn't get ruined when you arrive home at 9:45. You can also watch a previously recorded program while recording another show, if the disc has room for the new program.

Scheduling was a cinch. I was able to schedule up to 32 programs at a time, a month in advance. Auto Record mode, which records at the highest quality that will fit on a disc, is especially convenient.

Other attractive features let you copy movies direct from a DV camera and edit recordings—terrific for removing annoying commercials.

All great, but why spend $350 on this type of device? If you use TiVo, a DVD recorder is extraneous. That leaves people who want to record at higher quality than a VCR permits, archive shows or home movies, or watch recorded videos on another DVD player or a laptop. If that's you, the DVR-320-S is a good choice.

—Dave Hamilton

DVD RECORDER

Pioneer DVR-320-S

★★★★

DW VERDICT: A solid DVD recorder with some of the features of a digital video recorder.

PRICE: $350

dwfind.com/43764

TV on Your Notebook

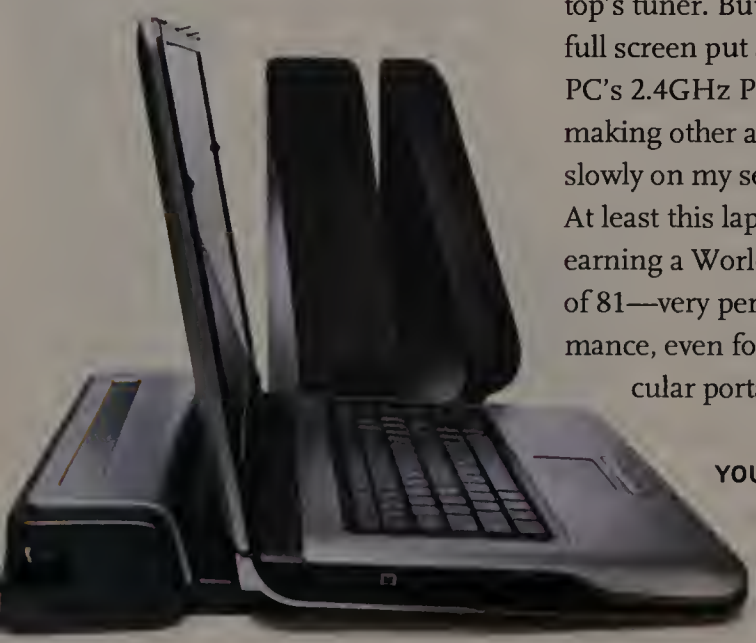
Test Center

SONY'S MASSIVE, 10.5-pound **Vaio VGN-A190** laptop lets you watch TV, record programs, and serve live TV and prerecorded videos to other PCs over a network. But the work required to get everything working will remind you that this is indeed still a computer.

The $2799 Vaio has a docking station with TV tuner and coax input; you can't watch TV unless it's docked. Install an app on a remote PC to receive streaming TV from the laptop's tuner. But watching at full screen put a drain on my PC's 2.4GHz P4 processor, making other applications run slowly on my second monitor. At least this laptop is fast, earning a WorldBench 5 score of 81—very perky performance, even for such a muscular portable.

The VGN-A190 relies heavily on home networking, but the wireless function on the unit I tested was flaky. My connection alternated between excellent and nonexistent, causing the streaming app to grind to a halt or even crash. In fact, after one particular crash, remote TV streaming refused to work again.

As a regular notebook, the VGN-A190 is impressive. But the fun stuff should be more fun to use. *–Alan Stafford*



YOU CAN watch The Simpsons or Charlie Rose on this beast.

NOTEBOOK

Sony Vaio VGN-A190

★★★½

DW VERDICT: A clunky but cool Media Center-like laptop.

PRICE: $2799

dwfind.com/43280

DO PISTOLS PLAY BETTER?

THE $70 **MonsterGecko PistolMouse** promises the adrenaline rush of actually shooting a handgun when playing a first-person 3D shoot-'em-up game. Unfortunately, the PistolMouse sounds more fun than it is to play. I tested a preproduction unit with Activision's Call of Duty and Return to Castle Wolfenstein and found it clumsier to use than my optical mouse, which proved quicker at changing the character's perspective. When gun-toting soldiers are bearing down on you, these things matter. (★★½, dwfind.com/43766)

–Jeff Bertolucci

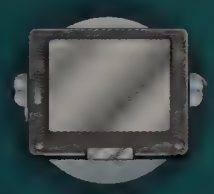
PHOTOGRAPHS: MARC SIMON

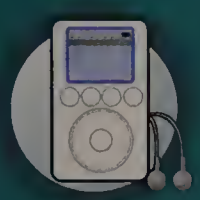
XIMETA™
creator of NDAS

Save Everything, Share Everything

Photos

Artwork


Downloads


Music

Movies

Work Data

Laptop

Work PC

Media PC

Digital Settop

NetDisk™

Network Direct Attached Storage

NetDisk is the only external hard drive that lets you share files with all the computers on your network.

Backup your files, secure against virus & hacker threats, and block spam with included Symantec software.

POWERED BY NDAS

symantec.

www.ximeta.com

©2004 XIMETA, Inc. All rights reserved. The XIMETA, NetDisk, and NDAS logos are trademarks of XIMETA, Inc. All other trademarks are the property of their respective owners. Specifications subject to change without notice.

Gaming Cell Phone: Take Two

NOKIA'S **N-Gage** gaming cell phone was the *Gigli* of the tech world when it first came out last year. Fortunately the N-Gage QD fixes many of the original's problems.

No more holding the phone on its side to take a call (see www.sidetalkin.com for a tribute). Inserting a game is simple. And now you can play games on an airplane by turning off the GSM cell phone function. The QD also has Bluetooth for networked gaming and syncing with a PC.

Nokia currently offers some good N-Gage games, but the catalog pales in comparison to that of Nintendo's Game Boy. And as a cell phone, it still seems oversize and gawky—kind of like my high school prom date. —*Cathy Lu*

Game controller: The eight-way navigator doesn't have the greatest feel—it's a little hard to control in certain games.

Screen: The 178-by-208-pixel screen looks bright and crisp. Of course, it'll soon be covered in face smudges from doing double duty as a cell phone.

Speaker: Even with the visual cue of the speaker, you may have trouble figuring out which end is up.

Battery and SIM slot: The back cover hides the battery and SIM card slot. Battery life is much improved: I played The Sims Bustin' Out for days on end (at least 9 hours in all) on the same charge—not too shabby.

MMC slot: No removing the battery to insert a game card, as with the original.

Keypad: Dialing the keypad is awkward if not impossible with one hand.

GAMING CELL PHONE

Nokia N-Gage QD

★★★ ½

DW VERDICT: Decent gaming device but still awkward to use as a cell phone.

PRICE: $179 (without activation)

dwfind.com/43774

FUNKY GADGETS

STUFF YOU DON'T NEED

USB Desktop Aquarium

This is just what you want for your PC: plastic poissons that resemble Nemo and Dori. Your USB port powers the water current and a high-intensity blue LED. Includes two fish; you supply H_2O. It's $20 at ThinkGeek.com.

dwfind.com/43776

SuperFridge!

Identity crisis? LG Electronic's **LRSPC2661T Internet Refrigerator** ($7999) has a camera, calendar, TV, jukebox, and Internet workstation. Oh yeah, it also keeps the milk cold.

dwfind.com/43778

Must-See TV

Hang the **TV Anywhere** from the shower curtain rod, and

get naked with Bob Barker on the 3.5-inch screen. It costs $400 at SharperImage.com.

dwfind.com/43780

—*Regina Lynn Preciado*

PHOTOGRAPHS (LEFT): MARC SIMON

iriver™
the future of entertainment

Introducing the iRiver H300 series. These sleek portable mp3 players deliver features that you can't find anywhere else: play hundreds of hours of music, view color digital photos, record music from any audio source and more. For info, visit www.iRiverAmerica.com.
iRiver products are available nationwide at Amazon.com, Best Buy and Circuit City.

On the Road With GPS

CAR-BASED GPS navigation systems are supposed to help you find your way when you don't know left from right. When I went for a spin with the $900 **TomTom GO**, I ended up at my destination, but the product's quirks still left me feeling a little lost.

Installation takes 2 minutes: Stick the mounting arm to your car's windshield via a suction cup, plug the power cable into the cigarette lighter socket, and snap the GO onto the arm. The GO is easy to program, thanks to a touch screen and colorful menu system. It comes with maps for the U.S. and Canada, which you load on the included 256MB SD (Secure Digital) memory card.

Unfortunately, once mounted in my Saturn, the GO was too far from the driver's seat; I had to scoot forward to reach the touch screen. Plus, the weak hinges on my test unit sometimes dropped the GO when I hit a bump (the company says other mounting options will soon be available). The screen wasn't readable through sunglasses.

Sound was a problem: I found the volume either too loud on side streets or too low on freeways, yet changing the volume while driving was difficult. And on one or two occasions, the GO stopped talking—once in midsentence. I guess I must have made it mad.

Unless you're willing to live with the GO's idiosyncrasies, you may want to stick with a map for now.

—*Lincoln Spector*

WHERE AM I? TomTom helps you get back home.

GPS NAVIGATOR

TomTom GO

★★★

DW VERDICT: Traveling with this GPS presents a few road bumps.

PRICE: $900

dwfind.com/43826

GPS WATCH

SUUNTO X9

SUUNTO'S $699 wrist-top computer combines all the functions of my aging Suunto Vector rock-climbing watch with a fully functional GPS. The **X9** lets you upload and download waypoints and routes between the watch and your PC. It also has a built-in compass, an altimeter/barometer, and time functions, including stopwatch and alarms. But the X9 was often slow to get a location fix—about 3 minutes, even in open country. Plus, poor documentation made the learning process difficult. (★★★ , dwfind.com/43770) —*Tracey Capen*

Palm Helps You Find Your Way

PUT ME IN an unfamiliar neighborhood, and I'm bound to get lost. So I took PalmOne's $299 **GPS Navigator** along on a drive to California's Monterey Peninsula.

It worked flawlessly.

I clipped a Palm Zire 72 PDA (the navigator also works with the Tungsten T3 PDA) into an included windshield bracket, tossed the Bluetooth-based GPS receiver on the dash, and launched the included TomTom Navigator software, which has digital maps of the U.S. and Canada. The Navigator quickly locked onto my location, plotted my course, and gave me turn-by-turn directions that were easy to read, even on the Palm's small screen.

Just two complaints: Downloading maps through Palm's HotSync is painfully slow, so get an SD Card reader for your PC if you change maps often. It's also a shame that maps don't support the T3's expanding screen.

—*Tracey Capen*

PALMONE'S Navigator is a wireless directional assistant.

BLUETOOTH GPS

PalmOne GPS Navigator

★★★★

DW VERDICT: Outstanding for turning Bluetooth-equipped Palms into navigators.

PRICE: $299

dwfind.com/43768

PHOTOGRAPHS: MARC SIMON

KONICA MINOLTA

The essentials of imaging

Imagine touching the sky.

Imagine cameras that can.

DiMAGE Z3 • 4 megapixel, 48X zoom, anti-shake

DiMAGE Z2 • 4 megapixel, 40X zoom

DiMAGE Z10 • 3 megapixel, 32X zoom

How far can Konica Minolta's family of Z cameras take you? With their amazing mega-zoom capabilities, the sky's the limit, allowing you to go from point A to point impossible in just an instant. Combining superior optics with unparalleled technological innovation—like a revolutionary anti-shake feature (Z3 only)—every Z camera delivers gorgeous, super sharp images at all ranges. And, with the world's fastest AutoFocus (f2.8 – f3.5),* bolstered by Predictive Focus Control, you'll never miss a shot. Best of all, there's a Z camera for every budget, so everyone can get in on the action. The DiMAGE Z cameras. **Imagine what we can do together.**

The DiMAGE Z cameras with up to **48X mega-zoom.**

Nothing else gets you closer—or takes you higher.

*Among digital cameras with a built-in 8X or greater optical zoom, as of May 2004

www.ph.konicaminolta.us

Stylish, Versatile DVD Player/Receiver

I'M A GREAT BELIEVER in separate home theater components, and the $390 SD-PX2 won't change my mind. But if you're on a budget and all you want to do is watch DVDs with surround sound, this combo product won't disappoint.

The **Sharp SD-PX2** combines a 35-watts-per-channel surround-sound receiver with a DVD player that can handle CD, Super Audio CD, DVD-Audio, CD-R, and CD-RW. At 4.5 inches wide, it's designed either for wall-mounting or as a stand-alone box, and it has a jazzy yet tasteful appearance. Unfortunately, the unit stands upright, and discs tend to tumble out when you go to remove them.

Video images looked a bit grainy, and getting the color saturation right took some fiddling. You can choose between component, S-Video, or composite connections.

On the audio side, the SD-PX2 filled a decent-size media room with music, but if you prefer things on the loud side, this might not be the unit for you—it will definitely have trouble powering speakers with low sensitivity ratings.

Music playback lacked airiness and detail in the high frequencies—and sound quality got worse as I switched from DVD-Audio (the unit's strong suit) to SACD to CD. The CD sound was barely acceptable to me. Less-fussy listeners, however, are unlikely to notice these shortcomings, even when playing CDs.

Despite its weaknesses, the SD-PX2 is a solid and versatile product for people who are building their first home theater and don't want to buy separate components.

—*Ramon G. McLeod*

SILVER AND SEXY: Sharp's SD-PX2 cuts the cable clutter.

DVD PLAYER/AUDIO

Sharp SD-PX2

★★★½

DW VERDICT: Great for home theater newbies—and for cutting component clutter.

PRICE: $390

dwfind.com/43510

Firefly Pushes Wrong Buttons

SNAPSTREAM'S $50 **Firefly** remote control lets you access music, photos, and movies on your living-room PC without leaving your couch. However, while it has some interesting features, too few current PC applications lend themselves to remote control.

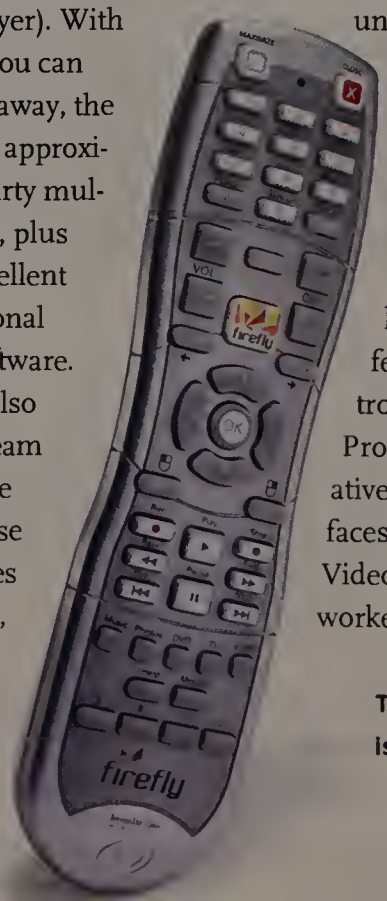
Firefly comes with the Beyond Media Basic software package, which includes rudimentary apps for controlling video, music, and photos (oddly, you need your own software DVD player). With an interface that you can read from 10 feet away, the software supports approximately 80 third-party multimedia programs, plus SnapStream's excellent BeyondTV 3 personal video recorder software.

Beyond Media also includes SnapStream Spotlight, a feature that lets you browse online partner sites for movies, music, and news. Spotlight worked decently, although I found moving between the free and fee-based services a tad unintuitive.

But the big problem with Firefly (and other PC remotes) is that PC apps have too many features to control with a remote. Programs with relatively simple interfaces, such as Blaze Video's BlazeDVD, worked well; but with more complicated apps, such as Musicmatch, I often had to use Firefly's Mouse mode to click buttons awkwardly.

For now, I think I'll stick to a wireless mouse and keyboard when accessing my media from afar. ■

—*Tom Mainelli*



THE FIREFLY is no mouse.

PC REMOTE CONTROL

SnapStream Firefly

★★½

DW VERDICT: A few interesting features, but controlling PC apps is still too difficult.

PRICE: $50

dwfind.com/43772

ON THE WEB VISIT DW ONLINE

WWW.DIGITAL-WORLD.COM

More great stuff! Read reviews of the ATI HDTV Wonder at dwfind.com/43902 and Onkyo's DV-CP802 six-disc DVD changer at dwfind.com/43904.

PHOTOGRAPHS: MARC SIMON

THE Little Player That Could

E2go from APEX DIGITAL blazes new trails for personal media player enthusiasts

CONSUMERS EXPECT INNOVATION and value from market leaders—nothing less. And that is just what buyers will get in Apex Digital, Inc.'s new E2go Personal Media Player, a device that is simply like no other. In short, the E2go blows past everything else on the market in terms of value, ease of use, and exceptional audio and video features. It is the future of portable entertainment, and only Apex is bringing consumers the future right now.

Using the sleek and smart E2go, mobile entertainment aficionados can play back, record, and carry just about all of their media in a single, compact device that travels easily in a pocket or purse. Moreover, Apex designed this unique media player to give consumers what they want—namely, the ability to handle more than a dozen audio, video, and still image file types.

With its beefy 20-GB hard disk, the E2go lets users record, store, and play back up to 80 hours of video, 5000 songs, or more than 200,000 still images, depending upon file sizes. And don't worry about file formats. The E2go can store and play back files of more than a dozen popular types. For audio, these include MP3, WAV, WMA, LPCM, and ADPCM. For video, these include MPEG4, DivX 3.x-5.x, Motion JPEG, and WMV9. And for images, the compatible file types include JPEG, GIF, TIFF, and BMP.

RECORDS ON ITS OWN TO A SPACIOUS HARD DISK

Get this: The E2go records and encodes video on its own, with no intermediary device needed, digitizing and saving the recordings directly to the hard disk. The E2go's ultra-compact 1.8" hard disk drive minimizes weight, noise, and heat generation, while a snappy 3.5" LCD screen delivers crisp images. For audio, the E2go produces sound either through high-quality stereo earphones or its built-in speaker.

Another feature setting the E2go apart from all other media players is its ability to record and encode non-copy-protected video from standard video sources, like VCRs, PVRs, DVDs, and camcorders. This remarkable device also records voice notes, plays back images as a slide show with audio, and outputs video to a standard TV via an "AV out" connection. This means that commuters, travelers, or carpoolers can use the E2go's recording capabilities to catch up on their TV viewing.

» The E2go Personal Media Player: a huge step forward for mobile consumers.

Transferring files to or from the E2go and a desktop or laptop computer is a breeze with its USB 2.0 connection. With the USB connection and the massive 20-GB hard drive, the E2go can double as a portable hard drive easily taken on the road. Another superb feature of the E2go is its user-removable/replaceable, rechargeable Li-Ion battery, which is as easy to change as the batteries in a digital camera. Other players require users to actually ship the player back to the factory when the time comes for a new battery (which any of these players will ultimately need).

Apex has a vision of a future rich in affordable, feature-laden entertainment products. The innovative E2go is an extension of that drive to give consumers the options and control they want over how and where they choose to watch or listen to their recorded media content.

Despite this cutting-edge innovation, Apex is continuously guided by the notion of providing high quality at a fair price. Small wonder Apex is the fastest-growing company in consumer electronics history.

■ *To learn more about the remarkable E2go Personal Media Player or about Apex, click now on www.apexdigitalinc.com.*

PC WORLD ADVANTAGE MARKETING

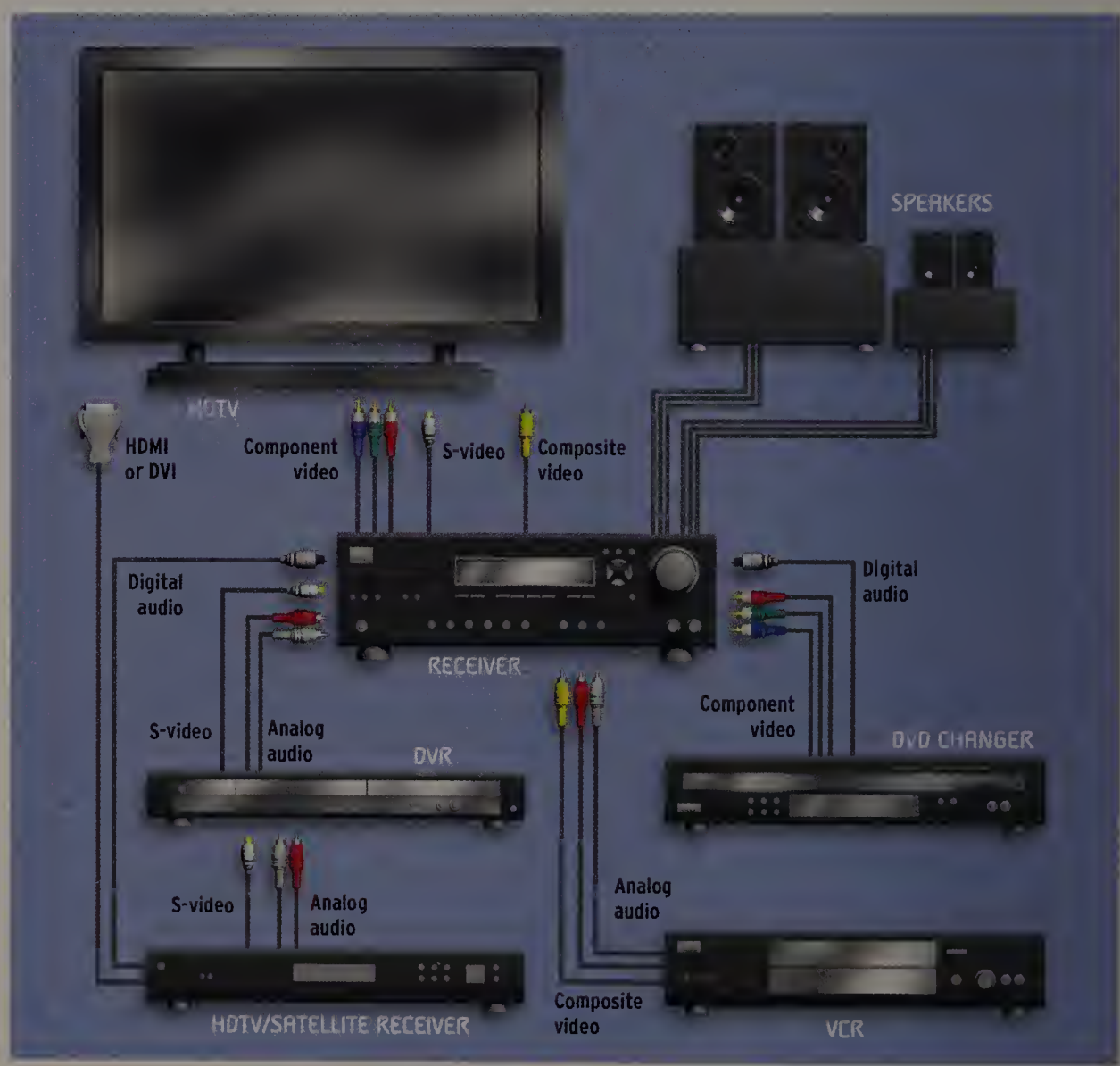
Calming the Cable Cacophony

Do you get the heebie-jeebies when you see all those inputs on the back of a home theater receiver, a TiVo, or your stereo equipment? We can help sort them out. BY MICHAEL RIGGS

THE RIGHT WAY TO HOOK IT ALL UP

THERE ARE AN absurd number of ways to connect a home theater system, but the basic rule of thumb is to stay digital wherever possible and use the connection that results in the highest-quality audio and video signals. In the example at right, the satellite receiver connects directly to an HDTV using either an HDMI or DVI cable for a digital video signal. If your video source won't allow this, use the next best thing: component cables. If you can't do that, use S-Video or composite as a last resort.

Writer Michael Riggs has been reviewing A/V gear for more years than he likes to admit.



HOW TO CURE CABLE CLUTTER

The cables that connect the parts of a typical home theater tend naturally to form rats' nests. The tangle not only is unsightly, it also can be maddening if you need to troubleshoot a connection or add or replace a component. It can even cause audio hum or video interference. Here are a few tips on keeping it neat.

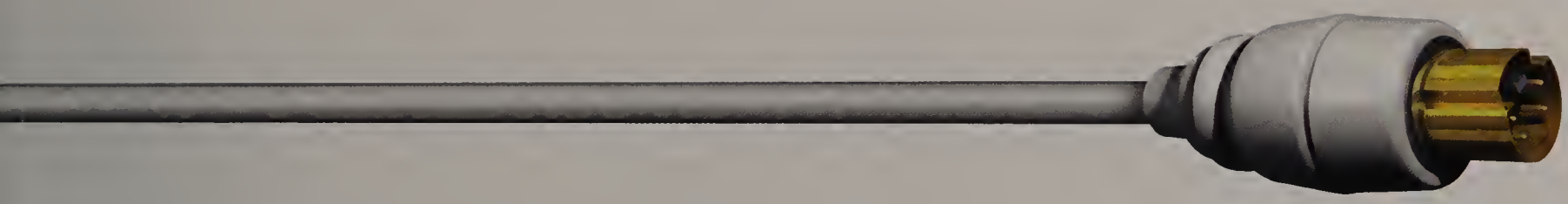
1 **Bundle signal cables** that lead from one component to another. You can buy plastic tubing designed for this purpose, but cables cinched with hook-and-loop ties do the job quickly. Adhesive tape also works, though it's harder to remove when you want to make changes, but you can use it as cheap labels as well.

2 **Keep power and signal** cables separate. Running them parallel in close quarters encourages them to hum.

3 **Label each end** of every cable or cable bundle according to source, destination, and function to maintain sanity. You can buy premade labels for this purpose, though, again, adhesive tape is serviceable and easily customized.

4 **Avoid using unnecessarily** long cables. Some suppliers like Blue Jeans Cable, www.bluejeanscable.com, will make cables to your specifications. Custom cables can cost more, but are worth it if you have unusually long runs.

ILLUSTRATIONS: DAVID PUCKETT



VIDEO CABLES

VIDEO SIGNALS ALL start and end in RGB format (a display uses red, green, and blue to create a full-color image). But video sources process and deliver those signals in different ways, and often you'll have more than one type of connection to choose from. Which one will give you the best image? Our take: For analog video, go with component cables if possible. If that isn't possible, and it often won't be, use S-Video. Your last resort is composite, the familiar "yellow" cable made famous by VCRs. For digital video, use an HDMI or DVI connection

COMPOSITE VIDEO

The lowest-common-denominator analog connection, this is the "yellow" cable that typically connected older VCRs to TVs.

S-VIDEO

Significantly better than composite video, but still analog. Requires a single cable with a small multipin plug at each end.

COMPONENT VIDEO

The best analog video connections. They're the minimum requirement for carrying HDTV or progressive-scan DVD signals.

DVI (DIGITAL VISUAL INTERFACE)

A digital RGB connection is ideal for digital displays, especially those with HDTV signals.

HDMI (HIGH-DEFINITION MULTIMEDIA INTERFACE)

Same as DVI but with a more convenient connector, plus lines for carrying digital audio.

IEEE-1394

Also called FireWire, IEEE-1394 is a digital interface that can carry audio, compressed digital video, and other data.

AUDIO CABLES

GOOD NEWS: AUDIO is simpler than video. The two basic types of signals—digital and analog—subdivide into two common types of connection for each. If the audio originates in digital form (as it will from CD, DVD, HDTV, satellite TV, and digital cable), you'll almost invariably want to keep signals digital until the point where they must be decoded to analog.

RCA ANALOG

Classic coaxial cables with an RCA plug at each end, one cable for each signal channel. They are equal in quality to miniplug.

COAXIAL DIGITAL

Transmits digital-audio signals via 75-ohm coaxial cables, usually fitted with RCA plugs. It looks almost identical to RCA analog.

OPTICAL DIGITAL

Transmits digital-audio signals by means of light pulses through plastic fiber-optic cables. Usually fitted with Toslink connectors.

SCREEN TESTS

Big HDTVs are big news—so we lined up eight plasma and DLP models in our lab to separate the flat-out fabulous from the flops. Plus: A guide to getting high-definition programming.

BY SEAN CAPTAIN
TESTING BY ELLIOTT KIRSCHLING AND JEFF KUTA

PHOTOGRAPHS BY RICK RIZNER AND MARC SIMON

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

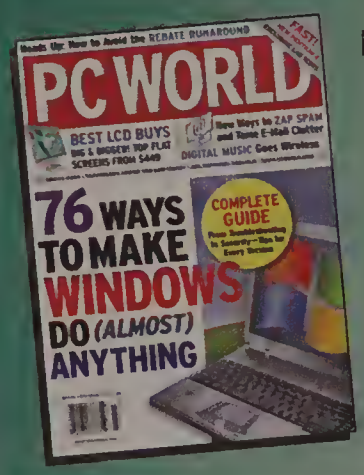
POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 37787
BOONE IA 50037-4787

GIVE A GIFT OF PC WORLD

Enjoy our special holiday gift rate:
Just $19.97 for 12 issues.



PC WORLD is the perfect gift that lasts all year. Each month, your gift recipient will receive an issue of **PC WORLD** — packed with savvy computing tips, how-to's, news and reviews, Top 100 PC rankings and much more.

Plus, when you give **PC WORLD,** you'll get our exclusive **CD-ROM Wallet FREE** as our gift to you. This sleek CD-ROM wallet holds 16 of your favorite software or music CDs.

SEND GIFT TO:

NAME (Please Print)

ADDRESS

CITY STATE ZIP CODE

BILL ME (After Jan 1, 2005):

NAME (Please Print)

ADDRESS

CITY STATE ZIP CODE

☐ I also would like to subscribe

Send no money now. We will bill you after January 1, 2005

Offer good in U.S. only.

G4ABDDL08

BONUS INSIDE

PREMIERE ISSUE OF **Digital World**

FROM THE EDITORS OF PC WORLD (SEE BACK)

PC WORLD PRODUCT FINDER

BEFORE YOU BUY, COMPARE ONLINE WITH PC WORLD'S PRODUCT FINDER

Product Finder's trusted product listings let you sort quickly by lowest price, most popular, by retailer, or by retailer rating. Plus, it's brought to you by PC World, so you get plenty of buying advice, product reviews, detailed specs, and 20 years of experience.

Find the gear you want at the best prices!

Shop for Digital Cameras
www.pcworld.com/cams

Compare Prices and Features on Plasma TVs
www.pcworld.com/plasma

Find the Most Affordable and Portable DVD Player
www.pcworld.com/portabledvd

Groove to the Best Deals on MP3 players
www.pcworld.com/mp3players

www.pcworld.com/productfinder

TECHNOLOGY THAT POWERS YOUR LIFE

HOTTEST HDTVs, GADGETS, AUDIO, VIDEO & MUCH MORE!

Digital World is a new publication devoted to covering the convergence of PCs, consumer electronics, and mobile communications gadgets. *Digital World* will help you choose the best gear and buy products with confidence, based on authoritative, approachable, and entertaining articles.

CURRENT ISSUE

BONUS WITH THIS ISSUE OF PC WORLD

FEATURES/REVIEWS

- Next-Generation HDTV
- Digital Audio Here, There, and Everywhere
- Make Digital Movies on a Shoestring
- Get Great Shots With Your Camera Phone

COLUMNS

- Descrambler: Cable Cacophony
- Tech at Home: High-Def Hassles
- Gear to Go: Video Handhelds
- Skeptical Shopper: Minimum Advertised Price

UPCOMING ISSUES

DECEMBER 2004

BONUS ISSUE WITH THE DECEMBER 2004 ISSUE OF PC WORLD ON SALE NOVEMBER 16, 2004

- Surround Sound Setups
- Digital Gift Guide
- Robot at Your Service
- IPod Accessories

FEBRUARY 2005

BONUS ISSUE WITH THE FEBRUARY 2005 ISSUE OF PC WORLD ON SALE JANUARY 18, 2005

- The Best Digital Products
- Entertainment Goes Wireless
- GPS Devices
- TiVo and Beyond

DO YOU CRY AT the end of *Cinema Paradiso*, lean in to see the *Nip/Tuck* surgery close-up, or leap from the couch when your team scores a touchdown? Do you love TV?

With a growing number of high-definition programs and high-quality DVDs, there's a lot to love. When everything works, big-screen HDTVs deliver images with rich color and fine detail.

For this review, our Test Center examined TVs with screens measuring 50 or 52 inches diagonally. Five were plasma TVs with bright images, rich colors...and price tags of up to $9000; three were Digital Light Processing rear-projection sets. While bulkier than plasmas, DLP sets are far slimmer than tube-based TVs—and, at $3000 to $4000, cheaper than plasmas.

What about LCD TVs? Models over 40 inches are starting to appear, but the cheapest cost around $10,000. Plasma and DLP TVs, meanwhile, will get cheaper: The research firm ISuppli/Stanford Resources predicts price drops of 28 percent on 50-inch plasmas and 19 percent on DLP sets in the next year. ▶

New TV models don't all premiere at once, so the latest sets from companies such as Sony and Samsung weren't ready in time for this review. But of the plasmas we reviewed, superb screen quality earned Pioneer's $9000 PDP-5040HD the Digital World Choice award; Panasonic's TH-50PX25U/P offers nearly comparable quality for $1200 less and wins our Digital World Value award. The Digital World Choice award for DLP goes to Optoma Technology's 50-inch OptomaTV RD50.

PLASMA OR DLP: SEXY VERSUS THRIFTY

EVEN TURNED OFF, almost any plasma TV looks cooler than a projection set. Ironically, these skinny sets have a lot in common with good old CRTs. Both form color pictures by illuminating combinations of phosphor dots that glow red, green, or blue. But instead of lighting phosphors with an electron gun at the end of a long tube, as CRTs do, plasmas use electrically charged gas—the plasma—in tiny cells, one cell for each phosphor dot.

Plasma TVs are so thin you can hang them like pictures. But they can weigh 100 pounds or more, so you need heavy-duty hardware (sold separately) and a good carpenter to wall-mount them.

Projection TVs all magnify a small image with lenses and mirrors and project it onto the back of a translucent screen. Older sets generate the image with CRTs; newer ones shine light through small LCDs or bounce it off mirrored, LCD-like chips called liquid crystal on silicon (LCoS). But the most popular projection technology today is DLP. A lamp shines light through a spinning wheel made up of red, green, and blue filters, producing color pulses that hit a chip containing nearly 1 million pivoting mirrors—one for each pixel on the screen. The more often a mirror pivots, the brighter the pixel will appear.

TEST REPORT: LIVING LARGE WITH GOOD SHOWS FROM PLASMA AND

THE BEST PLASMAS, SUCH AS those from Pioneer and Mitsubishi, are stunning, but lesser models can be expensive disappoint-

		IMAGE QUALITY BY CHARACTERISTIC				IMAGE QUALITY IN CONTEXT			
	PLASMA TV	Overall impression	Color quality	Brightness/ contrast	Detail	HD television	Standard television	DVD movies	In bright light
1	Pioneer PDP-5040HD ★★★★½ $9000 dwfind.com/43750	59	65	64	60	66	56	62	67
2	Mitsubishi PD-5030 ★★★★☆ $7000 dwfind.com/43782	59	61	61	63	62	59	64	62
3	Panasonic TH-50PX25U/P ★★★½☆ $7800 dwfind.com/43784	55	58	58	56	58	54	60	57
4	LG Electronics DU-50PZ60 ★★★☆☆ $6499 dwfind.com/43786	47	56	52	46	51	46	55	57
5	Gateway 50-inch HD-Ready Plasma TV ★★☆☆☆ $6000 dwfind.com/43794	36	36	41	48	42	39	38	36
	DLP PROJECTION TV								
1	OptomaTV RD50 ★★★★☆ $3200 dwfind.com/43796	51	54	57	53	54	50	60	54
2	RCA Scenium HDLP50W151 ★★★½☆ $3899 dwfind.com/43798	51	52	61	53	57	50	53	59
3	LG Electronics RU-52SZ61D ★★½☆☆ $3250 www.dwfind.com/43800	44	48	42	52	47	48	48	45

CHART NOTES: Plasma and projection TVs are ranked separately and scored according to the following criteria: Image quality: 40 percent; ease of use: 15 percent; features: 30 percent; and support: 15 percent. The chart includes only image-quality scores. Numbers represent a percentage of a possible perfect score of 100.

sets are so thin, you can hang them like a picture. But they can weigh 100 pounds or more, so you need heavy-duty hardware (sold separately) and a good carpenter to wall-mount them.

But the projector and mirrors take up space, so while DLPs don't weigh more than plasmas, they are taller and deeper (around 15 inches for our models). You can't wall-mount them, but on a table, they don't need more space than plasmas.

Viewing angle is a big differentiator between plasma and DLP. Plasmas look the same wherever you sit; DLPs lose brightness and contrast as you move off center. Our DLP sets retained good picture quality throughout a side-to-side viewing-angle shift of at least 90 degrees; the up-and-down range was tighter, so setting the TV at the right height for your viewers is key.

Another DLP problem is a rainbow effect. The pulses of red, green, and blue light come and go so quickly that you usually perceive them as appearing all at once. But you may occasionally see flashes of individual colors, especially in a very dark room. On the other hand, images on both plasma and DLP TVs suffer under intense light, especially direct sunlight.

Overall, plasmas have a slight edge in image quality, and their thin profiles give you more setup options. But DLP's disadvantages are not huge, and the lower prices are a big plus.

Also, DLPs age more gracefully. Phosphors on a plasma ▶

REAR-PROJECTION DLP TVs

ments. Good DLP models such as Optoma's perform very well and are a lot easier on the wallet.

Basic features	Special features	Support policies	DW verdict
• 50-inch, 1280-by-768 pixel screen • Supports 480i, 480p, 720p, 1080i DVI input • 2 HDMI inputs, 3 component inputs • 2 standard TV tuner, 1 HD TV tuner	• 5 video presets • 2 FireWire ports • Media breakout box for all inputs, outputs	• 1-year parts and labor warranty • 8-hour weekday phone support • No stated pixel-defect policy	With fine image quality and a sharp, clever design, the Pioneer would be a worthy addition to a dream house.
• 50-inch, 1365-by-768 pixel screen • Supports 480i, 480p, 720p, 10B0i DVI input • 1 DVI input, 2 component inputs • No standard or HDTV tuners	• 5 video presets • Advanced controls for 3 primary colors, 3 secondary colors, and gamma	• 1-year parts and labor warranty • 13-hour weekday, 8-hour Saturday, 4-hour Sunday phone support • Free on-site service • Guarantees 99.99 percent functioning pixels	The PD-5D3D is a good choice for hard-core videophiles with the time, interest, and funds to custom-build the ideal home theater setup.
• 50-inch, 1366-by-768 pixel screen • Supports 480p and 1080i DVI input • 1 HDMI input, 2 component inputs • 1 standard and 1 HDTV tuner	• 3 video presets • CableCard ready • Memory card slots for photo viewing • Auto-adjusts brightness to room lighting	• 1-year parts and labor warranty • 12-hour weekday, 9-hour weekend phone support • 3 pixel defects permitted	The Panasonic strikes a good balance of price and performance and provides the latest features for the future.
• 50-inch, 1366-by-768 pixel screen • Supports 480i, 480p, 720p, 1080i DVI input • 1 DVI input, 2 component inputs • 2 standard tuners, 1 HDTV tuner	• 7 video presets • 4 sound presets	• 1-year parts and labor warranty • 24-hour daily phone support • Free on-site service • Pixel defect issues handled case by case	This plasma has a sharp, clever design and fine sound system. But image quality, especially color, disappoints.
• 50-inch, 1366-by-768 pixel screen • Supports 48Di, 480p, 720p, 1080i DVI input • 1 DVI input, 2 component inputs • 1 standard TV tuner	• None of note	• 1-year parts and labor warranty • 24-hour daily phone support • Free on-site service • No stated pixel-defect policy	Poor color and sound, plus a DVI input that can't accept copy-protected HD content, make this set a terrible disappointment.
• 50-inch, 1280-by-720 pixel screen • Supports 480i, 480p, 720p, 1080i DVI input • 1 DVI input, 3 component inputs • 2 standard TV tuners	• 2 preset and 3 programmable video modes • Controls for 3 primary colors, plus yellow • Gamma control	• 1-year parts and labor warranty • 9-hour weekday phone support • On-site service per input • No stated pixel-defect policy	Though not so graceful in its design, the RD50 offers impressive advanced controls and looks good where it counts—on its screen.
• 50-inch, 1280-by-720 pixel screen • Supports 48Di, 480p, 1080i DVI input • 1 DVI input, 2 component inputs • 2 standard TV tuners, 1 HDTV tuner	• 4 video presets • 2 FireWire ports • Ethernet port for built-in Web browser • Optional $50 wireless keyboard	• 1 year parts, 90-day labor warranty • 12-hour daily phone support • 2 dark pixels and 0 bright pixels permitted	Colors are muted, but the RCA's bright, pleasing images hold up well in high lighting, and its sound system is first-rate.
• 52-inch, 1280-by-720 pixel screen • Supports 480i, 480P, 720p, 1080i DVI input • 1 DVI input, 2 component inputs • 2 standard TV tuners	• 7 video presets	• One-year parts and labor warranty • 24-hour daily phone support • No stated pixel-defect policy	As with LG's plasma, the pleasing design of this DLP set is undermined by disappointing image quality (especially the colors).

The top model in each category, regardless of price, wins our DW Choice award. The DW Value award honors a product deemed an excellent value for its price.

LAB NOTES

Putting HDTVs to the Test

Test Center

SOMEDAY ALL CONTENT SOURCES and all TVs will be digital. And our Test Center relied primarily on digital technology in order to display identical material in side-by-side quality tests.

For our DVD tests, we played *Seabiscuit* and *The Lord of the Rings: The Return of the King* on V Inc.'s $249 Bravo D2, using its DVI output. To test HD and standard-definition image quality, we used over-the-air broadcasts received via a set-top antenna and recorded on a PC using Macro Image Technology's $290 MDP-120, which includes a tuner and capture card, plus an $89 daughtercard to output the recordings over DVI-HD. We sent the HD and DVD signals to a Gefen 2:8 HDTV Distribution Amplifier, which fed them to the sets via DVI or DVI-HDMI cables.

We used Milori ColorFacts software and GretagMacBeth's professional-grade color analyzer to pick the preset color-temperature mode on each TV that most closely matched the TV and DVD standard of 6500 Kelvin. We then used the Digital Video Essentials DVD calibration kit.

Six judges rated recorded standard-definition, high-definition, and DVD content for color quality, detail, brightness and contrast, and overall impression. All scores were on a scale of 1 to 7, 7 being best; we then converted the sum of the scores to a percentage of a possible perfect score. The highest score achieved in any of the tests was 67 out of 100.

We ran most tests under lighting with a color temperature of about 5000 Kelvin to simulate evening viewing conditions, but repeated several tests with brighter lighting from combined 5000 Kelvin and 6500 Kelvin sources to simulate daylight conditions. We also informally checked DVD image quality using analog audio and component video connections.

TEST CENTRAL: Getting set for side-by-side tests.

PHOTOGRAPH: ROBERT CARDIN

screen gradually lose brightness, and after brightness drops by about 50 percent, your TV image is only a shadow of its former self. But the vendors of our reviewed plasmas estimate so-called half-lives of between 20,000 and 30,000 hours for their screens. That's seven to ten years of watching TV 8 hours per day, every day—enough for even *Law and Order* junkies to keep up.

BEAUTY FADES

BUT SOME PHOSPHORS on plasma sets may fade faster than others, leaving ghostly patterns on the screen—an effect known as burn-in. If you're addicted to CNBC, the ever-present ticker tape at the bottom of the screen will eventually leave a mark—as will static elements in video games (such as boxes showing your score) or the blank panels you get when programs don't span the full width or height of the screen. You can still watch this content, but if any single one dominates you risk burn-in.

Some plasma TVs have tools to combat burn-in. An orbiter feature in the Mitsubishi and LG models slightly (and imperceptibly) shifts screen images back and forth and up and down. The inverse function feature in these sets reverses the colors of programs, much as a film negative displays light in dark areas and vice versa. This causes the screen to age more evenly, so patterns are less likely to persist.

You can break in a plasma screen by evenly burning off its first 5 percent of brightness; LG's plasma can display a pure white screen for this purpose. A professional installer should also do this (see "TLC for Your HDTV," on the next page).

DLP sets don't suffer from burn-in, but their lamp bulb will certainly die. The vendors in our review estimate half-lives of about 8000 hours (2.7 years) for their bulbs; replacements run about $250 to $400 and you can install them yourself.

Both types of TVs are subject to defective pixels. Five manufacturers in this group provided a pixel-defect policy. The best was Panasonic's, which provides coverage if more than three pixels are defective. But Mitsubishi's guarantee that 99.99 percent of its pixels will function would allow up to 104 defects on the 50-inch TV's 1365-by-768-pixel screen. Most warranties provide coverage for only a year.

WHAT'S ON YOUR HDTV?

FOUR MODELS IN THIS review—the LG, Panasonic, and Pioneer plasmas and RCA's DLP—are true HDTVs, with integrated ATSC tuners that can receive HD signals over the air. The other models are "HDTV monitors" or "HDTV-ready": They require third-party receivers for HD content (see "Getting Set for HDTV," page 42). Except for the Mitsubishi, the other TVs have one or two NTSC tuners for receiving standard analog television. Because most television is still low-def and analog—and because

even high-def channels broadcast a lot of standard-definition content (broadcasters simply upscale the 480 lines of these shows to HD's 720 or 1080 lines of resolution)—we included several clips of it in our tests. However, our test material consisted mainly of recorded off-air HD programs and two DVD movies. We strongly recommend using digital sources—via a DVI or HDMI cable—with your digital TV, but some cable boxes and most DVD players have only analog outputs. Component video is the best of these (see the *Descrambler* column this month on page 24 for a guide to audio and video cables).

COLOR CONQUERS ALL

COLOR QUALITY WAS THE most important measure in our tests, and probably the area in which the TVs varied the most even after we calibrated each using Digital Video Essentials, a $25 tool on DVD.

Among the plasma models, Pioneer's PDP-5040HD took top honors for color, scoring 65 out of a possible 100 on our scale; the Mitsubishi PD-5030 was close behind, at 61. LG's plasma TV took some knocks for overblown colors. But Gateway's plasma is the real loser. While only 9 points separate the top-scoring Pioneer and the fourth-place LG in our color tests, 20 points separate the LG from the Gateway. Basically, images were the sickly yellow of photographs left in the sun for weeks. The Gateway also scored 11 points less than the LG in our brightness and contrast tests and in our judges' overall-impression rating.

Good performance, moderate price, a built-in HD tuner, and good control options earned the Panasonic our DW Value award. Among the projection TVs, the OptomaTV edged out the RCA, primarily for color quality.

Image quality and ease of use vary a good deal among today's plasma and DLP projection sets. But with proper upkeep, the latest high-end models will deliver big, beautiful pictures. So if you are ready to invest in a big, flat screen, one is ready for you.

Sean Captain, a freelance journalist, specializes in technology. Fred Kaplan writes for Slate *and other publications. Elliott Kirschling and Jeff Kuta are senior performance analysts in the Test Center.*

SETUP TIPS

TLC for Your HDTV

AT DEFAULT SETTINGS, most TVs exaggerate color and brightness in order to grab attention on a showroom floor. But you probably want something subtler in your living room. Once you buy, invest in full-blown calibration. Colors will be richer, details will pop out, and your TV is likely to last longer.

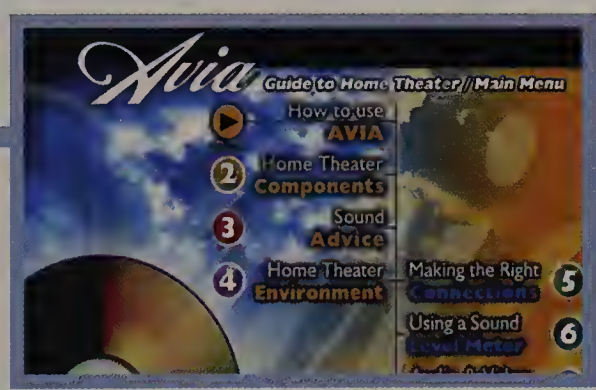
BASIC SETTINGS: A GOOD START

To adjust brightness and contrast, choose content with shadows or other dark details, then turn down the brightness until the blacks are truly black. If light areas look too dark, turn up the contrast.

If your HDTV's image mode is something like Vivid or Dynamic, try out a more subdued setting—Standard or Cinema, perhaps. Then check the Color Temperature or the White Balance. A low, or warm, value adds a reddish tint; a high or cool value adds a bluish tint. Choose a middle setting, which should come closest to 6500 Kelvin—that's the industry standard for displaying all TV and DVD content.

Finally, make sure the sharpness isn't set too high, which can create an artificial shimmer on textures or a halo effect around details.

These adjustments, while helpful, aren't as good as full-scale calibration.



DO IT YOURSELF: Avia's $50 kit helps guide non-professionals through basic calibration.

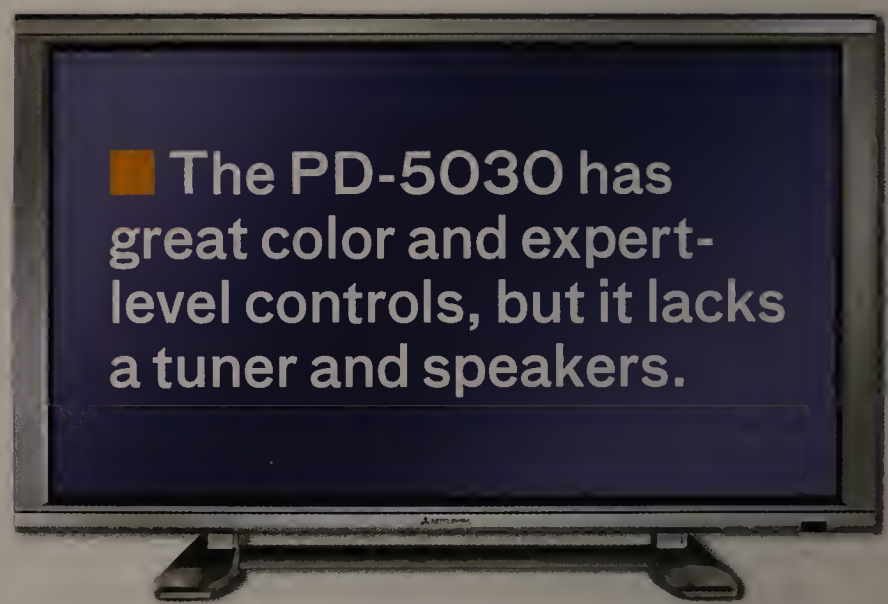
BASIC CALIBRATION: BETTER YET

Calibration's goal is to make content on your TV look the way its creators intended. You can do basic calibration yourself using DVDs such as Avia Guide to Home Theater ($50), Digital Video Essentials ($25), and Sound & Vision Home Theater Tune-Up ($16). These kits walk you through the process using test screens with known colors, contrast levels, and the like. Sound & Vision is best for newbies, Avia is more advanced, and DVE is the geekiest of the three.

Professional calibrators can make tweaks to your TV that you simply cannot. They can precisely measure color intensities and color temperature, and they have the codes required to access the set's service menu. (Even if you can reach those menus, using some controls without proper training can blow a power supply, cause a plasma screen to crack, or inflict other serious damage.)

The Imaging Science Foundation, which trains and certifies calibrators, says you should expect to pay $250 for basic calibration of a plasma or LCD TV and $275 for a rear-projection model. Prices go up for multiple content sources (such as an HDTV and a DVD player). Those fees aren't unreasonable for a set costing $5000 or more. You can find ISF-certified calibrators at www.Imagingscience.com.

PLASMA TVs



PIONEER PDP-5040HD

★★★★½ $9000

DW Choice

THE 5040HD WAS the top-scoring plasma for color and brightness and contrast. And the wide range of its sharpening control let us remove virtually all noise and ghosting from our HDTV recordings and DVD clips.

That control, plus the MPEG noise-reduction feature, did an exceptional job of removing video artifacts from Chapter 2 of the *Pirates of the Caribbean* DVD played over analog component input. The scene's booming musical track sounded rich on the TV's two 15-watt speakers.

But the Pioneer costs a lot of green. It also gives back a lot of green—the color, that is. Grass in a scene set in a meadow looked a bit like Astroturf; flesh tones often had a greenish or yellowish cast. Professional calibration might have fixed this, though.

The 5040HD's ATSC digital and two standard TV tuners are housed in a box that attaches to the TV via a two-cable umbilical cord that carries video, audio, and control signals. This setup lets you add or detach inputs without crawling behind the TV or removing it from the wall.

MITSUBISHI PD-5030

★★★½ $7000

MITSUBISHI'S PD-5030 tied the Pioneer in overall image-quality tests and beat it in displaying detail. Our judges liked the way DVD movies and standard-definition TV looked on this HDTV monitor. Images were crisp and bright; colors were also rich, though some judges found them a bit too red, as evinced sometimes in overly pink flesh tones. The Mitsubishi offers sophisticated controls such as gamma adjustment (which changes midtone brightness), independent high-end (gain) and low-end (bias) adjustment for each of the four color-temperature presets, and separate controls for levels of red, green, blue, cyan, magenta, and yellow in images. An excellent—if intimidating—manual describes these options.

But the unit has no stand or speakers, and only basic audio-processing circuitry. It was the only set in our review without a TV tuner, ATSC, or standard NTSC. While it has DVI and component inputs for attaching HDTV and NTSC cable or satellite boxes or a DVD player, you would have to spend a lot to turn this HDTV monitor into a true HDTV set. ▶

PLASMA VS. DLP
It's Not Just About Price

PLASMA TVs COST more than rear-projection DLP sets, but that doesn't mean they are better across the board; the best choice for you depends on what you're looking for. If DLP turns out to be the better bet, you'll save a bundle. If you choose plasma, you should at least know what you're paying for.

Plasma Display TV	DLP Rear-Projection TV
Very expensive ($5000-$9000 for 50-inch sets).	Sort of expensive ($3000 to $4000 for 50-52 inch sets).
Thin and sexy. Wall-mountable.	Much thinner than tube TVs. Not sexy; not wall-mountable.
Looks good from virtually any angle.	Quality degrades when you move up, down, or to the side.
Image quality slowly degrades over time and can't be fixed.	Occasional (pricey) lamp replacement should make the image quality good as new.
Displaying the same content for extended periods can cause image burn-in.	Can display the same content indefinitely without causing damage.
Some people will see the effects of burn-in, and it will drive them nuts.	Some people will see the rainbow effect, and it will drive them nuts.
The best ones look great.	The best ones look great.

Indulge yourselves.

Indulge yourselves with the ViewSonic® flat panel TV that's just right for you, and your budget. For years, visual technology innovation has made ViewSonic the professionals' choice. And now ViewSonic brings its expertise in high definition home with a lineup of LCD and Plasma TVs from 13" to 55," including integrated TV tuners, plug-and-play PC connections and stereo speakers for incredibly rich sight and sound.* With clear, high definition images for entertainment, gaming and computing, you'll enjoy unprecedented clarity, sharpness and color depth for the ultimate visual experience. See for yourself why ViewSonic is the #1 monitor display brand in the USA.** And add a new TV to any space you can imagine.

20" LCD TV at $599!†

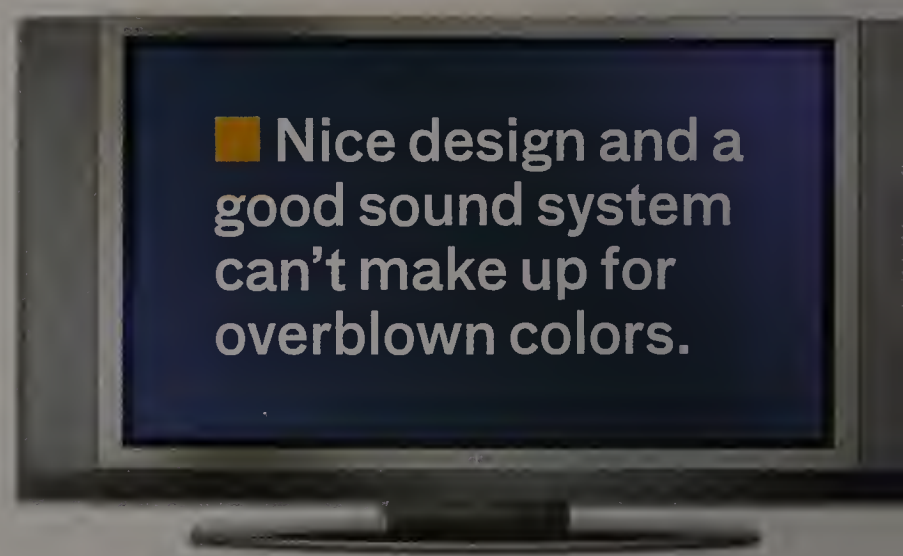
COMPUSA THE COMPUTER SUPERSTORE® www.compusa.com
CDW www.cdw.com
PCMall www.pcmall.com
Fry's Electronics www.frys.com
PC Connection www.pcconnection.com
amazon.com www.amazon.com
TigerDirect.com www.tigerdirect.com
Zones www.zones.com
Buy.com www.buy.com
Outpost.com www.outpost.com
MyerEmco ME AudioVideo www.myer-emco.com
RCS Computer Experience www.rcseshop.com
DATAVISION www.datavis.com

ViewSonic.com

Indulge

†Limited time offer. Specifications and pricing subject to change without notice. $5[illegible] price may be after mail-in rebate. See local retailer for details. Corporate names and trademarks stated herein are the property of their respective companies. *Features may vary by model. **Leading stand-alone, branded monitor by sales (CRT and LCDs combined; iSupply/Stanford Resources Monitrak® and Flat Panel Monitrak, 2Q04 report). Copyright © 2004 ViewSonic Corporation. All rights reserved. [12059-008-07/04]

ViewSonic



PANASONIC TH-50PX25U/P

★★★½ $7800

DW Value

THE PANASONIC PLASMA'S middle ranking in our quality tests may understate its appeal for some viewers. For example, although their rich hues earned the Pioneer and Mitsubishi plasmas the highest color marks, a couple of judges found those colors a bit too rich. In general, the Panasonic provided neither too much nor too little of any color. This Goldilocks appeal also applies to price: at $7800 (complete with HD tuner and speakers), the Panasonic is cheaper than the Pioneer, better equipped than the Mitsubishi, and worth the extra investment when compared to those that scored below it.

The TH-50PX25U/P is not merely about compromise. Its first-rate features include easy-to-navigate video and audio controls. On-screen menus include a helpful schematic of the remote control. The thorough, clearly written manual has a handy troubleshooting section.

This cutting-edge set has a built-in HD tuner and a CableCard slot (see *Seen/Heard/Tried*, page 13).

You can view digital photos on this TV by inserting SD (Secure Digital) memory cards or PC Cards into integrated slots. An optional mode called CATS uses an optical sensor to match the screen brightness to the ambient light conditions, which can reduce eyestrain and prolong screen life.

LG ELECTRONICS DU-50PZ60

★★★ $6499

THE LG HAS A smart, clean-looking design, great adjustment options, and a pleasing sound system—but our Test Center rated its image quality as simply mediocre.

Our judges scored this model second to last (though substantially ahead of the Gateway 50-inch HD-Ready Plasma TV) in three of our four image quality tests. And it ranked last on detail, due for the most part to excessive image sharpening that we could not completely turn off.

Oversaturated color was another persistent problem—a shirt that looked pale green on other TVs was a deep green when viewed on the LG set.

But while the DU-50PZ60 fumbles in its handling of color, it does offer some handy anti-burn-in tools—and shows considerable nuance with sound. The side-mounted speakers produce clean tones and convey complex subtleties of sound, such as the faint, ominous strings that surface when the cursed Black Pearl is first mentioned in the *Pirates of the Caribbean* DVD. Action films benefit from the LG TV's 3D Echo Sound option.

Also, choosing this model's Theater equalizer preset further enhances movie soundtracks. LG Electronics offers this preset and others for sports and music under the manufacturer's EZ Sound menu option. ▶

VIEWING TIP: COME INTO THE LIGHT

DIM LIGHTING IS GOOD for watching TV, but a completely dark room is bad for the picture and terrible for your eyes. If the TV is your only source of light, shifts from very dark to very bright scenes have an effect similar to what happens when you suddenly flip on an overhead light—you won't be able to see most of the detail in a scene while your eyes are adjusting. The same thing happens when you switch from a very bright to a very dark scene. Such jumps occur frequently in TV shows and movies.

Be good to your eyes by adding a little light—at least enough so that you can make out the contours of the room. Screen glare also hurts, however, so don't let lamps or sunlight shine directly on the TV. And as the room gets darker (say, at night), you'll get better picture quality by turning down the TV's brightness level.

SONY

More than you'd expect from a PC. Exactly what you'd expect from Sony.

Sony recommends Microsoft® Windows® XP.

Sony VAIO® A170 Notebook PC with XBRITE™ LCD Technology

Sony® VAIO® notebooks and desktops with all the power and innovation you expect from Sony. They fit perfectly into your lifestyle. And best of all, Sony VAIO® PCs are designed to work with other high-quality Sony products and accessories. So listen to your favorite music. Edit digital photos and digital video. Watch television or enjoy a movie on DVD. The possibilities are as endless as your imagination.

Sony VAIO® Notebooks feature Intel® Centrino™ Mobile Technology.

intel inside centrino™ MOBILE TECHNOLOGY

CALL 877-902-SONY (7669)

CLICK sony.com/pc11

VISIT a Sony Style® Retail Store

SONY

Sony® VAIO® Notebook PCs with Intel® Processors not only strike the perfect balance between form and function, but their mobility lets you explore a world of possibilities wherever you are and wherever you're going. With build-to-order versatility, wireless capability and interactivity, now there's no excuse for not living life on your terms.

Sony recommends Microsoft® Windows® XP.

Portable Multimedia Entertainment

A Series

Build-to-Order VGN-A170
- Intel® Pentium® M Processor 735 (1.70AGHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Home Edition
- 80GB[2] Hard Drive (4200 rpm)
- 17" Widescreen WUXGA (1920x1200) Display with XBRITE™ LCD Technology
- ErgoBright™ Technology with Smart Display Sensor
- 512MB (256MBx2)
- Integrated DVD±RW/CD-RW Drive[4]
- ATI® Mobility™ RADEON™ 9700 Graphics Card
- Integrated Wireless LAN 802.11b/g with Bluetooth® Wireless Technology[7]
- AV Entertainment Dock with Speakers for TV Viewing
- 1-Year Limited Warranty[3]

$2,739.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to an 80GB[2] Hard Drive (5400 rpm) for $100

Available exclusively at Sony Style® Retail Stores and Sony Style® Online. Limited supply!

Compact Design

TR Series

PCG-TR5AP
- Featuring Intel® Centrino™ Mobile Technology
  - Intel® Pentium® M Processor Ultra Low Voltage 733 (1.10 GHz,[1] 2MB L2 Cache)
  - Intel® PRO/Wireless Network Connection 802.11b/g[7]
- Microsoft® Windows® XP Professional
- 40GB[2] Hard Drive
- 10.6" Widescreen XBRITE™ LCD Display
- 1GB[2] RAM
- Integrated DVD-RW/CD-RW Drive[4]
- Battery Life from 2.5 to 5.5 Hours[6]
- Integrated Swivel Camera
- Sleek Design in a 3.11 lb. Light[5] and 1.44" Thin Body
- 1-Year Limited Warranty[3]

$2,999.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Privacy Screen for $79.99
- Sony VAIO® Large-Capacity Lithium Ion Battery[6] for $349.99

Beauty, Power and Performance

S Series

Build-to-Order VGN-S170
- Intel® Pentium® M Processor 735 (1.70GHz,[1] 2MB L2 Cache, 400MHz FSB)
- Microsoft® Windows® XP Home Edition
- 40GB[2] Hard Drive
- 13.3" WXGA Display
- 256MB RAM
- Integrated CD-RW/DVD-ROM Combo Drive
- Only 4.2 lbs. with Standard Battery[5]
- 1-Year Limited Warranty[3]

$1,849.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to a 60GB[2] Hard Drive for $50
- Integrated Wireless LAN 802.11b/g[7] for $50

Essential Computing

A Series

Build-to-Order VGN-A130
- Intel® Celeron® M Processor 1.40GHz[1] (1MB L2 Cache)
- Microsoft® Windows® XP Home Edition
- 40GB[2] Hard Drive
- 15" XGA TFT Display
- 256MB DDR SDRAM
- Integrated CD-RW/DVD-ROM Combo Drive
- 1-Year Limited Warranty[3]

$1,199.99 No Interest, No Payments for 6 Months.[10]

UPGRADES
- Upgrade to a 60GB[2] Hard Drive for $80
- Integrated Wireless LAN 802.11b/g[7] for $50

Performance Art

X505 Series

VGN-X505ZP
- Intel® Pentium® M Processor Ultra Low Voltage 1.10GHz[1]
- Microsoft® Windows® XP Professional
- 20GB[2] Hard Drive
- 10.4" XGA (1024x768) LCD Display
- 512MB RAM (64MB Shared with Video RAM)
- Estimated Battery Life (Standard Battery): 2.0–4.0 Hours[6]
- Amazingly Thin and Extremely Light, Weighing Only 1.85 lbs.[5]
- Nickel-Carbon Body for Ultra-Light Portability
- Includes Microsoft® Office 2003 Basic Edition
- Memory Stick® Mouse Included as a Bonus
- 1-Year Limited Warranty[3]

$2,999.99 No Interest, No Payments for 6 Months.[10]

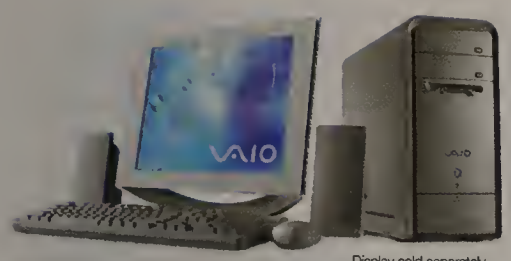
UPGRADES
- Add an Extra Sony VAIO® Standard Lithium Ion Battery[6] for $299.99
- Add the External DVD±RW Drive[4] for $399.99

CALL 877-902-SONY (7669)

CLICK sony.com/pc11

VISIT a Sony Style® Retail Store

Sony® VAIO® Desktop PCs with Intel® Processors and Sony exclusive preinstalled software couldn't be more entertaining. From burning your own DVDs and recording TV content to managing your music and photos, your recommended daily dose of entertainment comes with the ease and convenience you expect from Sony.



Display sold separately.

Affordability

RS Series

PCV-RS610

- Intel® Pentium® 4 Processor with HT Technology 2.80EGHz[1] (with 1MB L2 Cache)
- Microsoft® Windows® XP Home Edition
- 160GB[2] Hard Drive (7200 rpm)
- 512MB DDR at 400MHz
- DVD±RW/CD-RW and CD-ROM Drives[4]
- Sony Exclusive Software
  - Click to DVD™—for DVD Creation
  - SonicStage® Mastering Studio—for Digital Music Mastering
  - PictureGear Studio™—for Digital Photo Management
- 1-Year Limited Warranty[3]

$100 MAIL-IN REBATE

~~$999.99~~ **$899.99** After $100 mail-in rebate. Rebate offer expires 9/30/04. See www.sonystyle.com for coupon, and complete terms and conditions. No Interest, No Payments for 6 Months.[10]

UPGRADES

- Add the SDM-HS74P/S 17" Flat Panel Display for $599.99

Display sold separately.

Performance

R SERIES

Build-to-Order VGC-RA910G

- Intel® Pentium® 4 Processor 530 Supporting Hyper-Threading Technology (3EGHz,[1] 1MB L2 Cache, 800MHz FSB)
- Microsoft® Windows® XP Media Center Edition 2004
- New Advanced Liquid Cooling System
- 160GB[2] Serial ATA Hard Drive (7200 rpm)
- DVD+R Double-Layer DVD±RW Drive[4]
- 128MB ATI® RADEON™ X600 XT (PCI Express™ 16x) Graphics Card
- Convert VHS to DVD with Giga Pocket® Personal Video Recorder
- Sony Exclusive Software
  - Click to DVD™—for DVD Creation
  - SonicStage® Mastering Studio—for Digital Music Mastering
  - PictureGear Studio™—for Digital Photo Management
- Multimedia Card Reader[14]
- 1-Year Limited Warranty[3]

$1,558.99 No Interest, No Payments for 6 Months.[10]

UPGRADES

- Upgrade to a 1.6 Terabyte Serial ATA Hard Drive (7200 rpm).
- 3-Year Limited Warranty[3] for $199
- Add the SDM-HS74P/B 17" XBRITE™ Flat Panel Display for ~~$599.99~~ $549.99 after $50 mail-in rebate. Rebate offer expires 9/25/04. See www.sonystyle.com for coupon, and complete terms and conditions.

All-in-One

W Series

PCV-W700G

- Intel® Pentium® 4 Processor 2.80GHz[1]
- Microsoft® Windows® XP Home Edition
- 512MB RAM and 200GB[2] Hard Drive
- DVD±RW/CD-RW Drive[4]
- Wireless LAN Card[7] Included
- 1-Year Limited Warranty[3]

$1,999.99 No Interest, No Payments for 6 Months.[10]

Entertaining Combinations

Surround yourself with more entertaining possibilities. Sony VAIO® computers are designed to look beautiful, and engineered to work beautifully with other Sony products—creating a network of compatible devices that makes it easy for you to enjoy your music, photos and movies.

SDM-HS74P/B 17" Flat Panel LCD Display

$50 MAIL-IN REBATE

- TFT Active Matrix with XBRITE™ Technology
- 17" Viewable Image Size

~~$599.99~~ After $50 mail-in rebate. Rebate offer expires 9/25/04. See www.sonystyle.com for coupon, and complete terms and conditions.

$549.99 No Interest, No Payments for 6 Months.[10]

Combines XBRITE™ technology—the Sony standard in picture quality—with brilliant images, sharp text and eye-dazzling colors. Innovative floating-frame design complements any room in your home.

DCR-PC109 MiniDV Handycam® Camcorder

- 1.0 Megapixel Advanced HAD™ CCD Imager
- Professional-Quality Carl Zeiss® Vario-Tessar® Lens
- 10X Optical/120X Precision Digital Zoom
- Handycam® Station Included (Pictured)

$899.99 No Interest, No Payments for 6 Months.[10]

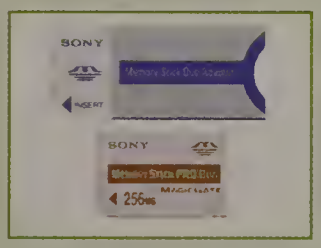
Compact and feature-rich, it's the perfect camcorder for people who demand quality and convenience.

NW-HD1 Network Walkman™ Digital Music Player

- 20GB[2] Hard Drive Digital Music Player
- G-Sensor™ Shock Protection Provides Impact Protection
- Up to 30 Hours Playback with Built-In Rechargeable Battery[13]

$399.95 No Interest, No Payments for 6 Months.[10]

The NW-HD1 is compatible with the Sony Connect™ Online Music Store. It plays back in ATRAC3™ or ATRAC3plus™ audio format and supports the most popular Internet audio formats, including MP3, WMA and WAV.[17]



MSX-M256A Memory Stick PRO Duo™ Media[8]

- 256MB of Storage (220MB Usable)
- Compatible with Standard-Size Memory Stick® Slot Media Using Included Adapter

$94.99

The Sony Memory Stick PRO Duo™ media is designed to easily store, transfer and share photos, music, presentations and more. Ideal for use in small digital devices.

FREE SHIPPING ON SELECT MODELS[11]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

NO INTEREST, NO PAYMENTS FOR 6 MONTHS[10]
ON ALL PURCHASES OVER $299.99

intel inside pentium 4 HT

Sony recommends Microsoft® Windows® XP.

sony style

Sony® VAIO® R Series Desktop PC with an Intel® Pentium® 4 Processor with HT Technology. Video editing and music-mastering performance doesn't get any better than this. With expandability up to 1.6 terabytes of storage, and innovative design to keep your system running cool and quiet, you'll have the quality and muscle you need for the results you want. Together with VAIO® Creation Suite PLUS software, it's the optimum combination of innovative Sony technologies.

LIKE NO OTHER™

Expert Advice

- Our team of knowledgeable salespeople offers the highest quality service, allowing you to explore every possibility with confidence.
- Chat live with a Sony Style® Online buying assistant, search our solutions database or experience the latest technologies firsthand by visiting a Sony Style® Retail Store.

Customized Sony VAIO® PCs

- Customize any Sony VAIO® PC configuration to meet your specific needs, with the help of a Sony computer expert.
- Maximize your computer's performance with the addition of genuine Sony accessories.

Unsurpassed Choices

- With our extensive collection of everything Sony, you'll have the freedom to search thousands of PC options.
- From computers to digital camcorders to home entertainment systems and everything in between, Sony Style® Online is the best place to find your favorite Sony products.

Easy Leasing and Financing

- Sony VAIO® PCs are as easy to purchase as they are to own, with easy financing and extended service options designed to meet your needs—including accidental damage coverage.[16]

ImageStation.com

- Picture visiting one Web site where you can share your photos via online albums and e-cards, get beautiful, high-quality photo prints and even make unique, fun photo gifts. You'll find it all at ImageStation.com.
- It's FREE to join. Start today and you'll receive 10 FREE prints.[9]

Sony Style® Entertainment

- Sony Style® Online fulfills all of your entertainment needs with thousands of DVDs, CDs, LPs and VHS to choose from. At Sony Style® Online, we know entertainment.
- Enjoy discounts on many of your favorite movies and CDs. With our integrated shopping experience, it's easy to find and purchase exactly what you're looking for.

FREE SHIPPING ON SELECT MODELS[11]
WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 10/31/04

NO INTEREST, NO PAYMENTS FOR 6 MONTHS[10]
ON ALL PURCHASES OVER $299.99

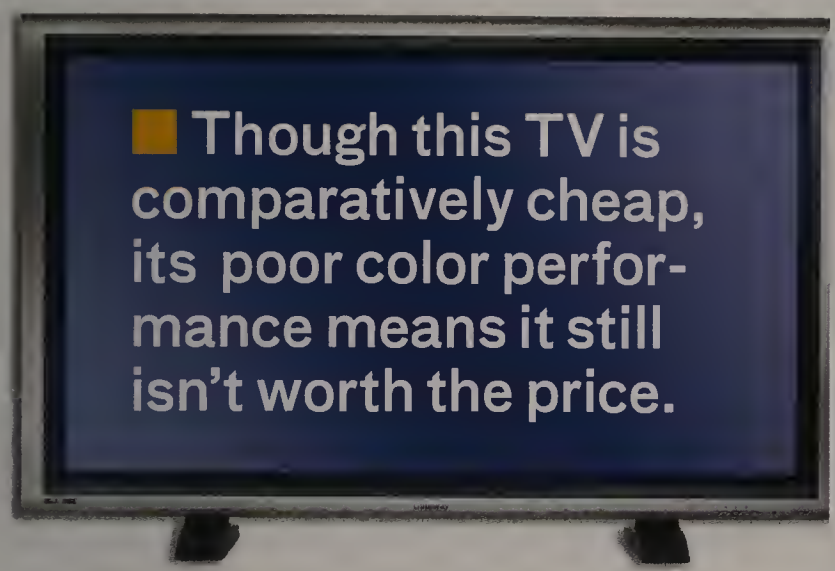
Sony Style® Retail Stores: Beverly Hills, Boston, Dallas, Detroit, Houston, New York, Orange County, Orlando, Palo Alto and San Francisco

CALL 877-902-SONY (7669)

CLICK sony.com/pc11

VISIT a Sony Style® Retail Store

DLP PROJECTION TVs



GATEWAY 50-INCH HD-READY PLASMA TV

★★ $6000

OUR JUDGES DEBATED the relative merits of some TVs, but they were unanimous in their assessment of the Gateway, rating it substantially lower than its competitors in most of our tests. Colors were not only feeble, they also had an amber or yellowish cast that made nearly all content look like a faded film print from decades past. No matter how many ways we tweaked the settings (via the rudimentary on-screen controls), we couldn't pump more life into images. And because the DVI input doesn't support copy protection for high-definition resolutions, you'll have to use analog inputs for some HDTV content. (Gateway reports that it's working on a solution.)

Audio quality was equally low. The integrated speakers produced muted, flat sound. However, you can attach separate stereo speakers and a subwoofer via the set's analog audio-out ports if you like.

Gateway's support policies and documentation are good, and the set costs less than the other 50-inchers here. But we can't recommend that anyone invest $6000 in a TV that is destined to disappoint. You'd be better off spending the money on a projection TV that would likely have better image quality.

OPTOMATV RD50

★★★★ $3200

DW Choice

OVERALL, THE OPTOMATV RD50 finished neck-and-neck with the RCA in our image-quality tests. But the OptomaTV is the better choice for certain conditions. It excelled in our DVD tests, where its richer colors gave it a clear edge in normal lighting conditions, and it scored only a bit lower than its rival in the high-def TV and bright-light tests.

In most cases, the RD50 struck a good balance between the LG's oversaturated hues and the RCA's slightly muted shades. And the OptomaTV has the best user-accessible image-quality controls, with adjustments for individual color intensities (red, green, blue, and yellow) and gamma, which affects midtone brightness. For each input source, you can program three different color parameters, plus the Normal and Cinema presets.

The set has some design flaws. The large on-screen menu makes it hard to see the effects of adjustments; time-out periods for on-screen controls can't be changed and sometimes seems short. The cheap-looking remote has mushy, rubbery buttons, and is the only one in this group that can't also control other devices. We liked the thin, gray bezel, but found the speakers, big buttons, and textured plastic panels below it distracting. ▶

VIEWING TIP: PLASMA PROBLEMS ON HIGH

IF YOU CAN see the ocean outside your window, any plasma TV should be fine for you. But if your view is of the mountains, be careful: At high altitudes (about 5000 feet or more), where atmospheric pressure gets low, the difference in pressure between the gas inside the plasma screen and the surrounding air can cause plasma displays to produce an intolerable humming or buzzing noise. Manufacturers have found a way to remedy this problem, but not all models include the fix. If you live in the mountains and are buying a plasma screen, check the model's specs and talk to the seller to make sure you get one suitable for operation over 5000 feet. Of the products we reviewed, only Panasonic and Mitsubishi gave us definitive answers on this issue: Panasonic said its TH-50PX25U/P model is suitable for use at up to 7200 feet; and Mitsubishi said the PD-5030 should be fine at up to 9000 feet.

RCA SCENIUM HDLP50W151

★★★½ $3899

COLOR DEFICIENCIES DAMPENED our enthusiasm for this otherwise swanky TV. In an HD clip from an auto show, for example, a sports car that looked candy-apple red on the other DLP sets appeared orange-red on the RCA. Likewise, some skin tones were a bit sallow. RCA says it deliberately uses less-intense reds to make images look more realistic, but we found the reds a bit too weak.

Though the RCA Scenium trailed the OptomaTV in three of our image tests, it jumped far ahead in brightness and contrast. A glossy screen filter gives images a vibrant appearance that helped this RCA TV excel in our bright-light torture test. But it showed distracting reflections, especially in a very bright room.

Built-in speakers sounded rich and powerful. The TV's impressive options include seven presets for specific content, a seven-band graphic equalizer, and ports for adding speakers or using the built-ins in a home theater setup.

The RCA has two standard and one HD tuner. You can connect other devices via two FireWire ports; an Ethernet port lets you connect to a network and surf the Web using the built-in browser and remote. But text viewed this way looked blurry, so don't chuck the PC just yet.

VIEWING TIP: SAVING A LITTLE MAY COST A LOT

UNLIKE PC VENDORS, who update products every few weeks or months and typically offer their latest and greatest products online first, TV makers usually keep the same models for a year or more. So what you see at a reputable vendor's store is probably the newest equipment (though you should always check manufacturers' Web sites to make sure). And shopping at brick-and-mortar stores is smart: With video devices, seeing before buying is critical.

Many big retailers—such as Best Buy and Circuit City—do have extensive Web sites where you can comparison shop for the best deals. But beware of sites with bargain-basement prices. Often they are hawking older models that were unsellable in regular stores. And always make sure that the seller is an authorized dealer of the brands it carries. If not, you probably won't be eligible for the manufacturer's warranty.

LG ELECTRONICS RU-52SZ61D

★★½ $3250

AS WITH ITS PLASMA screen, LG oversaturates the color on its 52-inch DLP rear-projection set. This unnatural effect earned it a lower score than the other two DLP TVs in our color test. In addition, the LG's slightly dim screen garnered a low score in our contrast and brightness test.

And unlike the OptomaTV and RCA sets—each of which had its strong points—the LG RU-52SZ61D ranked a distant third for both high and low lighting and for all content types: HDTV, standard TV, and DVD.

The subpar picture quality contrasts with this DLP set's handsome industrial design. With a matte-black screen bezel and bottom-mounted speaker grille, the LG Electronics has the neatest appearance among the DLP TVs reviewed here. This clean design carries over to the solid-feeling remote control and the bright on-screen menus.

The menus offer an impressive array of adjustment options, including seven EZ Picture presets for specific content, such as movies and sports, or viewing conditions, such as dim lighting.

This LG DLP set also has five audio presets for different content. You can toggle easily through audio and video modes via buttons on the remote. ▶

BEST BUY
Thousands of Possibilities
GET YOURS
2004 Best Buy
BestBuy.com

PROGRAMMING

Getting Set for HDTV

WHEN I BOUGHT an HDTV in 2000, I was shocked to discover that there was almost no HDTV to watch. DVDs looked great on the high-res screen, but standard TV shows looked no better than on my 20-year-old Trinitron. By 2002 not much had changed. Satellite services had a few high-def channels, but only a handful of cable operators had taken the plunge—and fewer still bothered to tell customers about it.

Now, two years later, it's another world. All the major networks—including PBS, Discovery, WB, and the premium channels—produce several programs, and in some cases a majority of them, in HD. And a growing number of affiliates carry the programs that way. Three-quarters of the nation's cable markets—and 99 of the top 100—offer at least some HD programming. In 173 cities, at least one local station beams high-def signals over the air; in 80 cities, at least three do.

But getting HDTV isn't simply a matter of plugging in an HD-capable set. You need a satellite dish, cable hookup, or antenna (for those local stations) to get the HD signal—and a decoder (either integrated or in a set-top box) to unscramble it.

As for sources, satellites reign supreme in the HD realm. Even the most bountiful cable companies, such as Time Warner in New York City, offer a mere 7 high-def channels. DirecTV offers 8, Dish Network has 9, and upstart Voom boasts 37.

A few caveats: Of Voom's 37 channels, 21 are originals, not offered anyplace else, and for good reason: Most are filled with very bad movies (the sort of stuff Mystery Science Theater 3000 used to make fun of) or cheesy extreme-sports events. Still, Voom carries HD broadcasts of Bravo, Starz, Cinemax, The Movie Channel, Encore, Cinemax, and Playboy (channels other satellite companies carry only in standard definition), as well as HBO, Showtime, ESPN, TNT, and Discovery (which the other satellite services have in HD, too).

HDTV HARDWARE: From top, Terk's indoor antenna; LG's LST-3410A HD tuner/DVR; and Comcast's Motorola HD digital cable box.

Of Voom's 37 channels, 21 are not offered anyplace else, and for good reason: Most are filled with very bad movies or cheesy extreme-sports events.

DirecTV and Dish also both carry HDNet and HDMovie Channel—which often show legitimate sports such as NASCAR racing, boxing, and NHL hockey; concerts; and good movies—while Voom does not. Dish has the high-def NBA channel, which neither of its rivals carries. For what it's worth, DirecTV is alone in carrying Spice HD, an after-midnight soft-core porn channel.

Dish and DirecTV both throw in the national CBS-HD broadcast. Some cable services, including Time Warner in New York, include local channels in their HD options; some don't. If yours doesn't, or if you go the satellite route, you'll have to put up an antenna. (Voom's package includes one.)

In any case, you'll need an HD decoder. Cable and satellite companies generally offer set-top boxes that include both a decoder and input jacks for an antenna wire. Some TVs have integrated HD tuners, and those with CableCard slots can bypass digital cable boxes. But you'll still need to hook up, whether to cable, satellite, or an antenna.

High-def has advanced so quickly, other popular gizmos—TiVos, for instance—have been slow to catch up. Dish offers an HD satellite receiver with a built-in high-def digital video recorder; it stores 25 hours of HD, 180 hours of standard def, or some mix of the two. DirecTV just came out with a device that offers 30 hours of HD and 200 hours of SD. Voom is scheduled to release its own product by year's end; it will come with a base station that lets you record a show on one TV and play it back on another.

Cable has lagged in this regard. Motorola recently rolled out two models of HD-DVRs—they're being offered by some cable operators in the Comcast, Insight, Armstrong, Bresnan, and MediaOne chains—but the boxes record only 10 to 15 hours of HD programming. LG makes a standalone HD-DVR that records 15 hours in HD, but it's clunky, costs over $1000, and doesn't let you watch one show live while recording another.

You can't have everything just yet. But at the rate things are going, you will soon. ■

—Fred Kaplan

(For local HD services, see www.cea.org/hdtvguide.)

Introducing STATE-OF-THE-ART Home Theater/ Business Theater Power Protection…

Why Choose Tripp Lite?

Ultimate Protection

- Superior surge-blocking architecture/ highest joule rating in its class
- Exclusive line noise filtering technology
- Multiple power-monitoring diagnostic LEDs
- Virtually indestructible all-metal housing

Peak Performance

- Sharper, crisper video
- Deeper, fuller audio
- Longer component lifespan

Best Value!

- Premium products at outstanding prices

…From the People Who INVENTED State-of-the-Art Power Protection.

As a hi-tech electronics enthusiast, you're probably already familiar with ISOBAR® Premium Surge Suppressors and their reputation. With over 15 million in use today, ISOBAR is the world's best-selling power protection product! ISOBAR's innovative design and advanced surge-suppressing technology have made it the choice—for over 20 years—of those who value sensitive electronic equipment and its performance!

Now Tripp Lite, the maker of ISOBAR, is introducing a complete line of power protection solutions specifically designed for home theater and business theater applications. Adapting our award-winning technology for sophisticated audio/visual environments, Tripp Lite Premium Home Theater/Business Theater Protection Products are engineered to ensure all electronic components are unfailingly protected and performing at peak levels.

Don't let AC power line problems compromise your viewing and listening experience! Get the ULTIMATE in performance and protection—choose Tripp Lite Power Protection Products!

See Tripp Lite at CEDIA EXPO 2004!

Please visit Tripp Lite at CEDIA Booth #2048 or go to **www.tripplite.com/hometheater** for full product specifications and dealer listings.

TRIPP·LITE
POWER PROTECTION

www.tripplite.com

DIGITAL MUSIC

Here, There, and Everywhere

What are today's top products and services for music lovers? We downloaded. We streamed. We listened. And here's what we found.

BY MICHAEL GOWAN

REMEMBER GOING TO a toy store as a kid? You went crazy from the sheer profusion of stuff—water guns, board games, baseball gloves, Barbies. And all those action figures.

The world of digital audio is like that now: a seemingly endless array of portable players, music download sites, wireless receivers, and software, to name just a few of your options. Whether you're gaga for Gershwin or a Foghat fan, we'll help you navigate through the glut of stuff and figure out what to get, how to get it, and how to make the most of it.

ILLUSTRATIONS BY OTTO STEININGER

GET IT

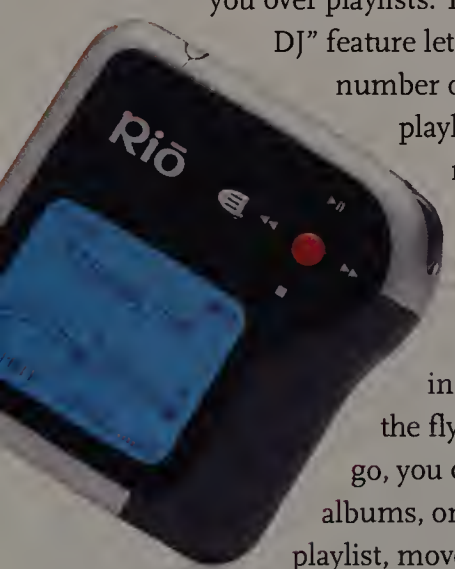
Where to buy music and what to play it on

JUST YOUR SIZE

Portable players come in all shapes and capacities. Here's the best of what's around.

LARGE-CAPACITY PLAYERS (5GB AND UP)

Our pick: Rio Karma, 20GB, $300
Apple's IPod is still a great player, but listen to a few reasons why the Rio Karma 20 is better. The Karma is a little thicker than the IPod, but it fits comfortably in a pocket and is almost an inch shorter. Its greatest advantage is the control it gives you over playlists. The Karma's "Rio DJ" feature lets you program a number of dynamic playlists—arrangements like music from any decade or tunes you haven't played in a month—on the fly. While on the go, you can add songs, albums, or artists to a playlist, move or delete tracks, and save the new list. Music syncs to the device quickly using Rio's software and USB 2.0. The included docking station has RCA outputs to connect to your stereo and an ethernet port, so you can listen to music on any networked PC. dwfind.com/40943

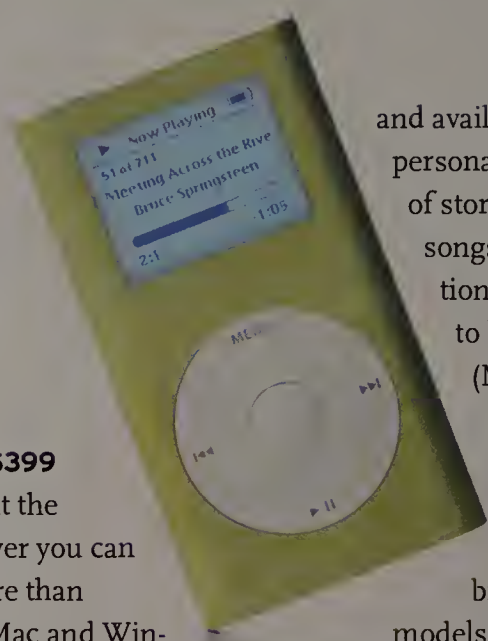


Runner-up: Apple IPod 40GB, $399
Sure, it's pricey, but the IPod's the best player you can get if you need more than 20GB of storage. (Mac and Windows) dwfind.com/43432

Noteworthy: Dell DJ 20, $279
A good value with one drawback: With its all-business design, the 20GB DJ looks like the beige box of MP3 players—how boring. dwfind.com/43434

MIDCAPACITY PLAYERS (1GB–5GB)

Our pick: Apple IPod Mini, $249
This plucky little portable introduced many of the improvements you'll find on the current IPod. The Mini's scroll wheel is the best available, combining touch scrolling with push-and-click buttons. You can easily find tracks in the familiar IPod navigation interface, and the text on the display is sharp. MP3 or AAC files sound rich and full, and a ton of preset equalizer options lets you tweak the bass and treble to your liking. It's even cute—and available in a color to match your personality. It's a little pricey for 4GB of storage, but we transferred 820 songs over the FireWire connection before maxing out—enough to keep us going for a while. (Mac and Windows) dwfind.com/43436



Apple IPod Mini

Runner-up: Rio Nitrus, $170
Rio's Nitrus isn't much bigger than many flash-based models and holds 1.5GB of tunes. An intuitive menu-based interface makes it easy to find what you want, although navigating with the red toggle switch on the unit's face can be a bit awkward. dwfind.com/38456

Noteworthy: Creative Nomad V 4GB, $200
This 4GB player can't compete with the IPod Mini for looks or sound, but unlike the IPod, it can play WMA (Windows Media Audio) tracks and comes with a removable, rechargeable battery. dwfind.com/43438

ULTRAPORTABLE PLAYERS (128MB–1GB)

Our pick: Rio Chiba, $129
The inexpensive Rio Chiba 128 holds only 128MB, but it has the best combination of sound and size among the ultraportables. You can jog through the park without the music skipping, thanks to the Chiba's lack of movable parts. This curvy player weighs a dainty 1.8 ounces and belts out impressive bass and treble tones. It uses the standard Rio interface—easy to read and easy to navigate, even if its red toggle is a bit awkward. The player can hold a couple of albums at once, depending on what format and bit rate you encode with. (Mac and Windows) dwfind.com/43440

SOUND ADVICE: TRANSFER FILES FROM AN IPOD TO YOUR PC

If your computer's hard drive crashes but you own an IPod, all music is not lost. After you resuscitate your hard drive, connect the IPod to your PC and find it as a hard drive in Windows Explorer: Select *Tools•Folder Options* and the *View* tab, and turn on 'Show Hidden Files' in Folder Options. Copy the 'Music' folder from the 'IPod_Control' folder. Open ITunes and import the folder into its library, and your PC will sing again. Mac users will need to use a utility like the $10 IPodAccess (www.finleydesigns.com).

PHOTOGRAPHS: KEVIN CANDLAND

Runner up: IRiver IFP-890, $180
The 256MB IFP-890 handles OGG as well as MP3 and WMA files, has an FM tuner and recording capability, and sounds great, but it's a bit bulky for this class of portable. dwfind.com/43442

Noteworthy: Creative Nomad MuVo TX FM 256MB, $150
This tiny player holds 256MB, includes an FM tuner, and detaches from its case to become an even smaller USB keychain drive. dwfind.com/43444 ▶

Rio Chiba

CLICK AND PAY, NOT CLICK AND PRAY

More people are paying to download music. Here's how the stores stack up.

SOMETIMES FREE MUSIC ISN'T WORTH the cost. Peer-to-peer download services like Kazaa are full of junk: poor-quality tracks and mislabeled files. And then there's the threat of the RIAA dragging you into court. Music download stores offer a legal way for you to get digital-audio tracks. For now, the latest generation of stores shows promise—but there's still room for improvement. We'd like to see higher-quality downloads, fewer restrictions, better compatibility between stores, and larger selections.

DOWNLOAD SITE	1. ITunes Music Store (DW Choice) ★★★★☆ www.apple.com/itunes	2. Real Music Store ★★★½☆ www.real.com	3. MusicMatch Downloads ★★★½☆ www.musicmatch.com	4. Napster Light ★★½☆☆ find.pcworld.com/41758	5. Sony Connect ★★½☆☆ www.connect.com
Facts and figures	• 99 cents per track • Mac and Windows • 5 simultaneous PCs, 7 playlist burns • Cost of *Purple Rain*: $7.92 (partial album, 8 tracks)	• 99 cents per track • Windows • 3 simultaneous PCs, 5 burns per playlist • Cost of *Purple Rain*: $8.91 (full album, 9 tracks)	• 99 cents per track • Windows • 5 simultaneous PCs, 7 playlist burns • Cost of *Purple Rain*: $7.49 (full album, 9 tracks)	• 99 cents per track • Windows • 3 PCs, unlimited burns • Cost of *Purple Rain*: $8.91 (full album, 9 tracks)	• 99 cents per track • Windows • 3 simultaneous PCs, 10 burns • Cost of *Purple Rain*: $9.99 (full album, 9 tracks)
Selections available[1]	• Loretta Lynn, *Van Lear Rase*: yes • The Pixies, "Velouria": yes • Stefon Harris, *Evalutian*: yes • !!!, *Lauden Up*: yes • Wilco, *A Ghast Is Barn*: yes	• Loretta Lynn, *Van Lear Rose*: no • The Pixies, "Velouria": yes • Stefon Harris, *Evalutian*: no • !!!, *Lauden Up*: no • Wilco, *A Ghost Is Barn*: yes	• Loretta Lynn, *Van Leor Rase*: yes • The Pixies, "Velouria": yes • Stefon Harris, *Evalutian*: yes • !!!, *Lauden Up*: no • Wilco, *A Ghast Is Barn*: no	• Loretta Lynn, *Van Lear Rase*: yes • The Pixies, "Velouria": no • Stefon Harris, *Evalutian*: yes[2] • !!!, *Lauden Up*: no • Wilco, *A Ghost Is Barn*: yes[2]	• Loretta Lynn, *Van Lear Rase*: yes • The Pixies, "Velouria": no • Stefon Harris, *Evalutian*: Yes • !!!, *Lauden Up*: no • Wilco, *A Ghast Is Barn*: yes[2]
The good	• Great indie label selection • Easy to browse • Easy to burn to CD	• Shows you an artist's entire discography even if the store can't sell the albums • High bit-rate 192-kbps AAC files	• Uses 160-kbps WMA encoding for good sound quality on purchased tracks • Easy to burn to CD	• Lets you download two tracks simultaneously, view other members' libraries, and download tracks multiple times	• Slick interface • Offers suggestions for misspelled words
The bad	You can transfer songs only to Apple's IPod and IPod Mini portable players.	You can transfer tracks only to Creative Nomad Jukebox Zen Xtra and some Palm handhelds.	• 30-second previews sounded poor • Difficult to browse	• Experienced difficulties downloading and burning a track • Confusing navigation	• Buggy application • Works only with Sony devices • Relatively few preview tracks
DW verdict	ITunes remains the best of the bunch, thanks to a great selection, acceptable digital-rights management, and an easy-to-use interface. Neat community features let you share playlists.	Real's music store offers the best-quality tracks available, which may satisfy finicky ears. Unfortunately you don't have a lot of options for transferring the song once you buy it.	The store doesn't have a great selection, but prices are similar to those at ITunes Music Store, and the tracks have better sound quality. A good alternative for those who don't own an IPod.	Napster's service doesn't require a monthly subscription and has many tracks available to buy. You can transfer tracks to more than 60 portable players. But navigating the site can be a chore.	Sony's store has a slick-looking application and handy search options. But all files are in their proprietary ATRAC3 format. Unless you own a Sony portable, look elsewhere.

[1] Surveyed on June 22, 2004. [2] Partial album.

PLAY IT

Make the most of the music you've got

MANAGE YOUR MUSIC LIBRARY

Learn to tame your digital-audio collection and find the song you're looking for.

WHEN YOU HAVE several thousand audio files, organization is key. Luckily, you can easily file and sort digital-audio files as entries in a music library, using a media player like ITunes or Musicmatch. The project just requires a little effort.

TAKE CARE OF THOSE TAGS

WHEN YOU ENCODE a track from CD, the media player usually queries an online database such as Gracenote to get tag information—track, album, artist, and other available data. If it finds a match, the software includes that info in the digital-audio file. But small things like inconsistent punctuation can thwart your organizational efforts. REM, for example, often appears as "R.E.M.," creating a separate entry in your music library.

Most media players offer an 'Edit Tag' function that lets you fix those details or add new info. Select multiple tracks from an artist's album, and you can usually edit all the album and artist tags in one batch.

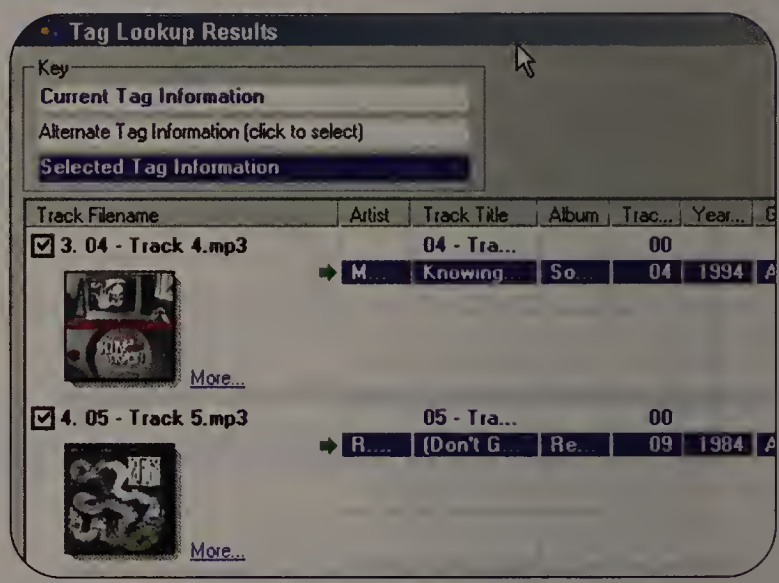
For bulk editing, try Musicmatch's impressive Super Tagging feature, available in the Plus version of the software. Select the tracks you need tags for, and Super Tagging brings back detailed information, including genre and album art. While you may need to edit the listings further, this tool definitely speeds up the process.

BUILD PLAYLISTS

ONCE YOU'VE SET up your tags, you can reorganize the tracks in any way—sort the view by artist name or track number, descending or ascending. Or get more creative with playlists so you can access favorite tracks quickly. For example, if you cue up the Beastie Boys' *To the 5 Boroughs* every morning, create a playlist that consists of those songs only. Or build genre-based playlists so you don't have to sort to find all your bluegrass tracks.

Most media players let you rate tracks so you can create lists of favorites. Take the time to specify that Gillian Welch's "Look at Miss Ohio" is a four-star track, while "One Monkey" gets one star. Then move all your highly rated tracks into one playlist for easy access. You'll never have to suffer through "One Monkey" again.

Some media players will create those kinds of playlists for you. ITunes' Smart Playlists let you create automated lists by picking from a list of rules like the ones you use to search the Web. Specify song titles that contain the words "love" and "you" to create an instant playlist for a romantic dinner. Or get complex. Build a Smart Playlist that picks blues songs, 4 minutes or shorter, that you haven't heard in a couple of months. You never know when you'll be in the mood.



MUSICMATCH'S 'Super Tagging' feature can help you tag unidentified tracks in bulk. It even downloads cover art.

RIPPING TIPS

Pick the right encoder, format, and bit rate.

RIPPING A CD is easy; finding a setup that sounds great can take some tweaking. With the right tools and a little forethought, you'll be ripping like a pro.

REAL EASY RIPPING

FORGET BASIC RIPPING software like Windows Media Player and the free version of RealPlayer—they're too restrictive. Windows Media Player 9 can rip music to WMA files, but you'll still need to buy extra software to rip to MP3. And RealPlayer can encode to Real Media format or AAC at high bit rates, but it ▶

SOUND ADVICE: PUMP DIGITAL MUSIC TO YOUR STEREO FOR $4

IF YOU DON'T MIND a few wires, you can connect your PC or portable player directly to your stereo using a Y-cable, available at RadioShack for $4. Connect the single RCA jack to either your PC sound card's line-out or your portable's headphone jack. Connect the left and right RCA jacks to your receiver (any port but phono), and you're set.

SAVE EVERYTHING™

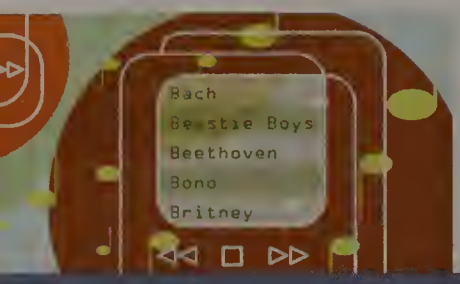
THE IOMEGA® REV DRIVE

Shoot. Save. Repeat 30,000 times. The Iomega REV drive stores it all on removable and rewritable 35GB disks. The rugged disks let you organize by year or subject. And its blazing-fast transfer speeds make it easier than ever to share, archive, and save everything.

iomega

saveeeverything.com

Iomega, REV, SAVE EVERYTHING and the stylized "i" are trademarks or registered trademarks of Iomega Corporation in the U.S. and/or other countries. Copyright © 2004 Iomega Corporation. All rights reserved.



PLAY IT

encodes MP3s at only low bit rates. For good quality MP3s, you'll want to encode your music at higher bit rates than those offered by RealPlayer.

Several free Windows programs, like CDex (cdexos.sourceforge.net) and EAC (www.exactaudiocopy.de), can rip to a variety of formats without such problems. I use CDex: It's simple and can rip music to any MP3 bit rate using LAME, an encoder consistently rated best in MP3 encoder listening tests. CDex can also rip from roughed-up CDs: Its Paranoia mode adds an extra level of error checking that compensates for scratches on the CD.

CHOOSING THE RIGHT FORMAT

BEFORE YOU RIP away, think about what format you want to use for encoding your CD: Should it be the ubiquitous MP3 format, the open-source Ogg Vorbis, or a proprietary one like Microsoft Windows Media Audio?

Generally, you should use the format you can do the most with. While ▶

RUNNING DOWN THE STREAM

Four wireless products make it easy to get audio from your PC to your stereo.

SECOND-GENERATION Wi-Fi digital-audio receivers still have their share of bugs, but new features, like a display on the remote for Creative's Wireless Music, hold some promise. Two models—Netgear's MP101 and Slim Devices' Squeezebox—get it mostly right. Unfortunately these devices still can't play copy-protected tracks from the ITunes Music Store or Musicmatch Downloads.

WIFI DIGITAL-AUDIO RECEIVERS

DW Choice 1. Slim Devices Squeezebox ★★★★½ dwfind.com/39746	DW Choice 2. Netgear MP101 ★★★★☆ dwfind.com/43448	3. Sound Blaster Wireless Music ★★★½☆ dwfind.com/39740	4. Linksys Wireless-B Music System ★★½☆☆ dwfind.com/43446
Facts and figures			
• $279 • Inputs: 802.11B Wi-Fi, ethernet • Outputs: analog, digital optical	• $130 • Inputs: 802.11B Wi-Fi, ethernet • Outputs: analog	• $199 • Inputs: 802.11B Wi-Fi, USB • Outputs: analog, digital optical	• $179 • Inputs: 802.11B Wi-Fi, ethernet • Outputs: analog, digital optical
Experiences			
• Setup: fair • Ease of use: easy • Display: very good • Sound quality: good	• Setup: easy • Ease of use: very good • Display: very good • Sound quality: good	• Setup: hard • Ease of use: easy • Display: good • Sound quality: good	• Setup: hard • Ease of use: easy • Display: hard to read • Sound quality: good
Extras			
• Works with Windows, Mac OS, and Linux • Supports many audio formats • Large-text option • Built-in clock	• Crisp, easy-to-read display • Can stream songs from the Rhapsody music service library	• Remote handles navigation and displays track info • Sets up via USB connection to PC	• Attachable speakers create a wireless boom box • Built-in list of Internet radio stations • Can stream from Rhapsody
DW verdict			
The Squeezebox is the choice for audiophiles and early adopters. With a digital-out port and support for uncompressed audio, it delivers great sound. The downloadable SlimServer software works well.	I had the inexpensive Netgear unit running in the time it took to install the software, hook it up, and enter my WEP key. Though you can't enlarge the text, the bright display is easily legible from a few feet away.	This unit's display is located on the remote, so it's easy to see what's playing. But the screen is slow to update. Setup requires a PC with USB, and you have to port tracks into Creative's MediaSource.	With speakers included, the Linksys unit doesn't need to connect to a stereo But it suffers from interference on the wireless network and from compatibility issues with Musicmatch's server software.

PHOTOGRAPHS: KEVIN CANDLAND

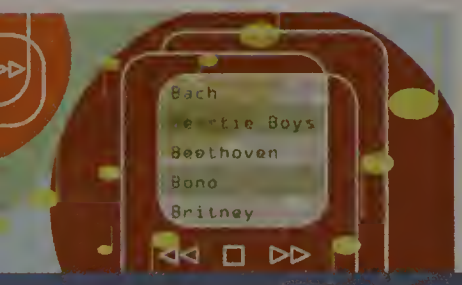
Offer Video Calibration to your Customers!

The ColorFacts™ Professional Calibration System is the premier method for calibrating Front Projectors, RPTVs, Direct View TVs, Digital (DLP) Televisions and Plasma Monitors.

- Fast and Easy to Use
- Includes All Hardware and Mounts
- Creates "Leave Behind" Reports
- Recognized by the ISF®
- Calibrates Multi-Display Video Walls
- Automates Many Common Tasks

www.colorvision.com/colorfacts

ColorVision® by datacolor



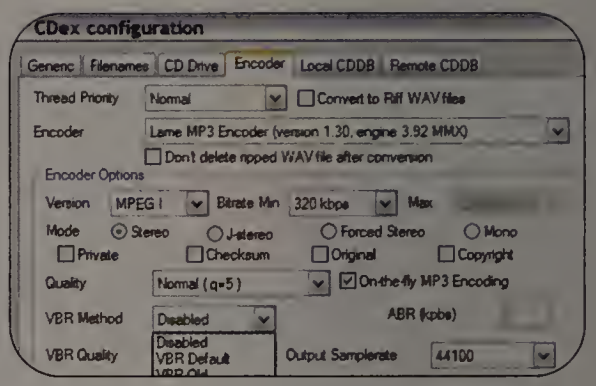
PLAY IT

many devices support a proprietary format or two, pretty much everything reads MP3 files. Apple's IPod plays MP3 and AAC (which it uses for ITunes Music Store downloads) but not WMA. If you've got a library full of WMA files, you'll have to re-encode them to use an IPod. But MP3 may not offer the best sound (see "The Audiophile Challenge"). If all your devices support a format that sounds better to you, use that format.

And if you encode with formats like AAC or WMA, you can use less file space without giving up any quality. The variable bit rate (VBR) option in MP3 encoders can also save space. VBR changes bit rates based on the complexity of the sound being encoded—simple parts are encoded at lower rates, while detailed sections get a higher rate. Or consider using a lossless codec that doesn't toss out data, such as FLAC, or Free Lossless Audio Codec (flac.sourceforge.net), or Monkey's Audio (www.monkeysaudio.com). While these codecs don't work on most portable players, they do shrink files with little perceptible quality loss—in some cases, to half the size of the WAV version, though you're still left with 20MB or larger for a 3-minute song.

NORMALIZE THE VOLUME

MUSIC IS RECORDED at different volume levels. If you're listening to an entire CD, you just knock the volume up or down a notch—not a problem. But when a playlist pulls tracks from all over your library, these differences can jump right out at you. You can sidestep this problem by normalizing the volume when you rip. The software analyzes the volume of the track and adjusts it so it plays at the same volume as the other tracks. Most MP3 rippers, including CDex, have options to normalize music automatically as it is ripped. *–Richard Baguley* ▶



The easy-to-use CDex gives you plenty of control over CD ripping, and it's free.

THE AUDIOPHILE CHALLENGE

Digital audio is improving, but people with golden ears can tell the difference.

LOSSY COMPRESSION techniques like MP3 can dramatically shrink files by discarding frequencies that most people can't hear. To those who listen to music with a discerning ear, nothing worse could happen. It's like cutting half the words from a Shakespeare sonnet.

But compressed audio is improving. MP3 encoders are better than ever, newer lossy compression formats like AAC are gaining converts, and lossless codecs like FLAC can preserve all the audio information in a recording. But can any digital-audio format satisfy a connoisseur?

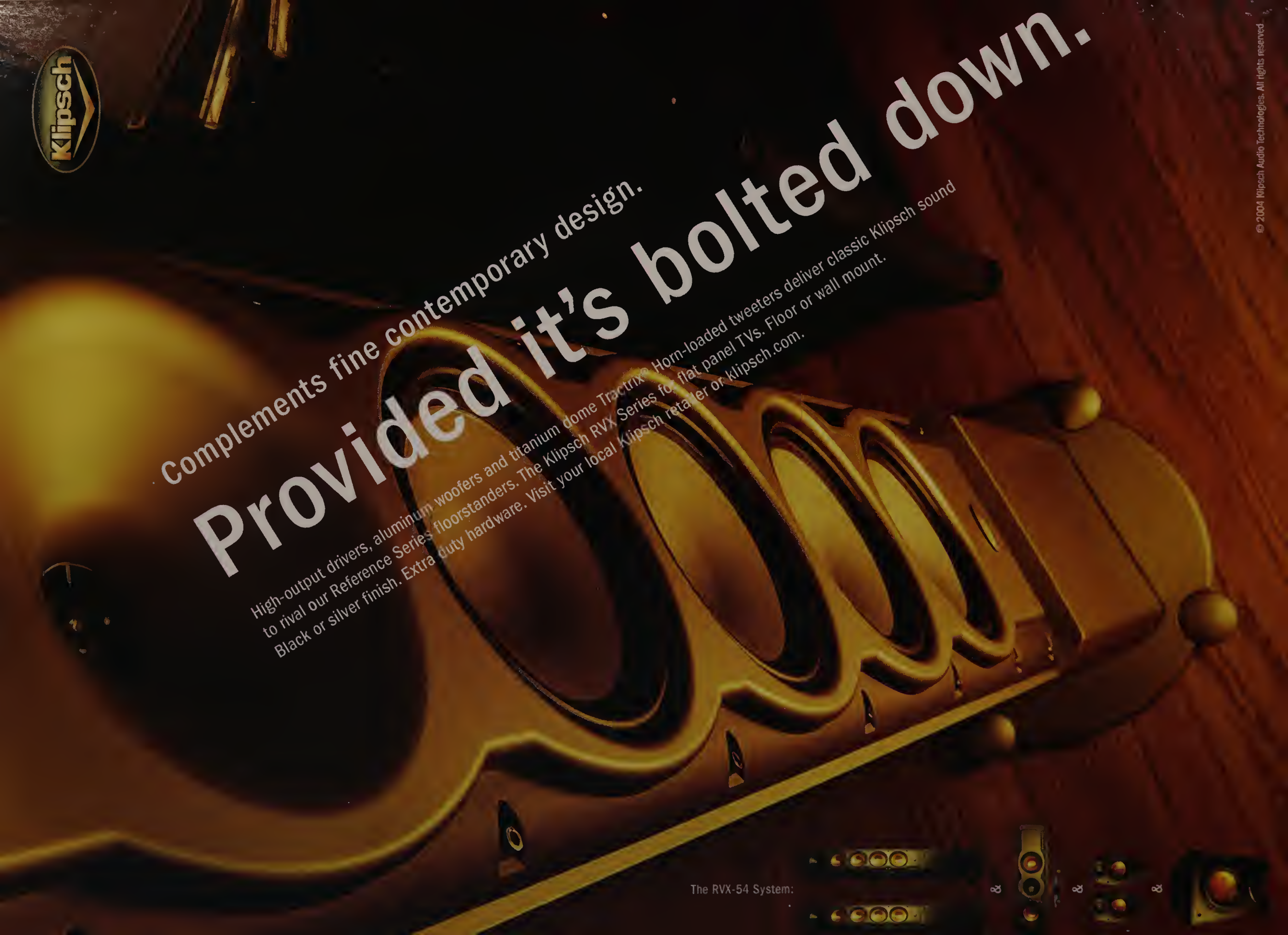
We put this question to the test. Our tough panel was composed of Jay Doherty, acoustical engineering manager for high-end speaker manufacturer NHT (www.nhthifi.com); Michael Silver, owner of Audio High (www.audiohigh.com), a music and home-theater store in Mountain View, California; and a crew of *Digital World/PC World* magazine staffers, including Ramon (Bud) McLeod, a confirmed and unrepentant audiophile.

The panel listened to tracks from a CD and then to the same music encoded on a PC in FLAC, 320-kbps MP3, and 192-kbps AAC. The music was played through a high-quality audio system that included an Audio Research preamp and tube amp and Living Voice Audience Avatar speakers. The judges rated each track according to a simple scale: indistinguishable from the CD original, acceptable, or unacceptable.

Our audiophiles spotted the PC-based compressed files almost before the first sound. More-casual music fans in the room had a different experience and even rated one track "indistinguishable."

Songs compressed with FLAC consistently scored better than either lossy codec. But here's a surprise: AAC beat MP3 overall—even though the AAC was more highly compressed. Our critics thought the MP3 files sounded harsher and less dynamic.

Still, the panel was impressed enough to open the door for casual listening. "I would listen to FLAC files," Silver said, while Doherty thought he could listen to the better-quality FLAC files in the car, where road noise would interfere anyway.



© 2004 Klipsch Audio Technologies. All rights reserved.

PERFECT IT

Essential software and accessories

ALTERNATIVES TO YOUR EVERYDAY MEDIA PLAYER

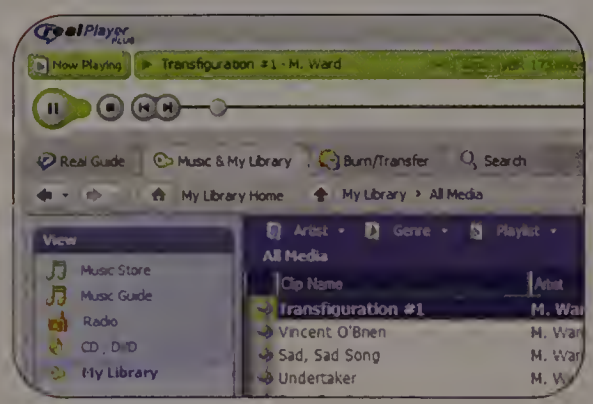
Don't get stuck in a rut with the same software.

HEY WINDOWS MEDIA users! And you ITunes folks, too. We know that you put up with your media player's problems and adapt your behavior to make it work. But you don't have to. Other media players are out there—and one may do exactly what you're looking for.

If you use Windows Media Player, try...

Musicmatch: If you prefer WMA files, Musicmatch can encode and play them just as well as Media Player can, and its file library is easier to use. Plus you can rip files into MP3 format—something you can't do with Media Player. The Plus version gives you faster ripping, faster burning, and more.

RealPlayer 10: Anything Windows Media Player can do, RealPlayer can do better. RealPlayer can play WMA music files and AVI video files just like Windows Media Player can, and it also plays Real's proprietary formats. Plus the integrated music store makes it easy to buy new tracks for your library. And compared to older versions of Real software, RealPlayer 10 seems lithe and less invasive.



REALPLAYER can play almost any file, including ITunes Music Store downloads.

If you use ITunes, consider...

Winamp 5.0 Pro: ITunes is easy to use, but power users may find it restricting. Winamp allows you to customize file names and folder structure for songs you encode, and it rips at up to 48X. You have to shell out $15 to get the full features, but the outlay is worth it. The interface is not as clean as ITunes', but try different skins to see if you can find one you like.

RealPlayer 10: Just because you buy tracks from ITunes Music Store, you don't have to use ITunes to listen to them. RealPlayer can play your ITunes songs, manage your IPod, and work with WMA files. And now it's available for Mac users, too.

PLUG IN, ROCK OUT

Audio plug-ins bulk up the sound of your MP3 files.

WITH MOST MEDIA players, you can use an equalizer to tweak the way your digital-audio files sound—more bass here, less treble there. But the effects go only so far. Plug-ins like Octiv's Volume Logic (octiv.com) for ITunes and FX Sound's DFX 6 Audio Enhancer (fxsound.com) can help you get more out of your music.

VOLUME LOGIC

FOR $20, VOLUME Logic makes an astounding difference in the sound of your files. The plug-in launches when you run ITunes (Mac or Windows). You select the preset sound you want, such as Rock, Hip-Hop, or Loud! As a track plays, Octiv's software remasters it on the fly, adjusting the volume and tweaking various frequencies multiple times a second.

The result is a track that sounds far better than typical MP3. A low-volume track like Bruce Springsteen's "The Ghost of Tom Joad" plays at the same level as louder songs like the White Stripes' "There's No Home for You Here." Cymbals crackle and drums pop in ways you expect from a CD but not from a compressed digital-audio file. Thanks to Volume Logic, the output from a $30 pair of Altec Lansing 220 speakers rivaled that from a $200 pair of Harman Kardon's Soundsticks, which include a subwoofer. Purists may complain that remastering disturbs the studio mix of a track, but most people will appreciate the new sound.

VOLUME LOGIC for ITunes can punch up the sound of compressed audio files.

DFX 6 AUDIO ENHANCER

FX SOUND OFFERS the $30 DFX 6 Audio Enhancer as a plug-in for Winamp, Musicmatch, and Windows Media Player. I tried the Winamp version. DFX 6 launches with Winamp and adjusts settings including Fidelity, Ambience, and 3D Surround to create a fuller sound.

The effect wasn't always an improvement. Applying the MP3 Enhancer—Light Processing preset to JET's "Are You Gonna Be My Girl" created an overly bassy sound, while the Ambience and 3D Surround settings made me feel as if I was listening in a tiled bathroom. But after I adjusted Fidelity and Dynamic Boost manually, the track sounded better than on the untweaked MP3 file. ▶

BRILLIANT • BETTER • **BENWIN**

BENWIN Digital Surround Sound

It's never been easier to use a 5.1 system. After an effortless Plug and Play setup, you can surround yourself with a digital sound unlike any other. You don't need an amplifier. You don't need a digital decoder. All you need is a BENWIN 5.1 Hi Fi Wireless Remote Speaker System for superb sound in an instant.

Toll-Free: **888-9-BENWIN**

BENWIN

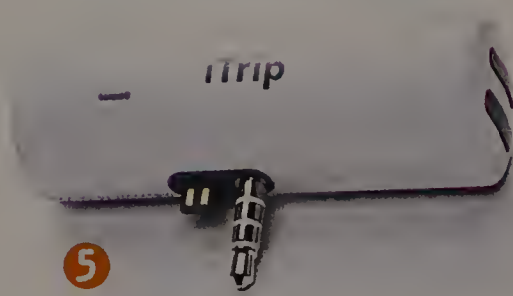
www.benwin.com

ECCO 5.1

PERFECT IT

PIMP YOUR PORTABLE

Trick out your portable MP3 player with these add-ons and extras.



HEADPHONES

THE HEADPHONES THAT came with your portable player aren't nearly as good as you can get. Chances are the included earbuds don't even stay in your ears. If you find your portable's sound lacking, look into an upgrade.

Shure's E3c (1) (www.shure.com) earphones offer rich, clear sound for the rich price of $179. The E3c reproduces sound with great range and precision—so much so that I could hear all the limitations of tracks encoded in MP3 format. The sound-insulating earphones block out surrounding noise well—I could hear soft acoustic tracks even while riding a train through a tunnel—and the kit includes different-size earpieces for different-size ears. A quiet listening environment seems worth $180. If that's too steep, Shure offers the $99 E2c, a slightly larger and less comfortable model.

If you hate earbuds and earphones, try Sony's $40 MDR-G74SL (2) (www.sony-style.com). The wraparound headphones bring out the deep bass tones and fold up into a portable package. The cushioned ear pads fit snugly and comfortably, so you can listen for hours torture-free.

PORTABLE SPEAKERS

NOW YOU CAN share your player's sweet sounds with friends, family, and passers-by, thanks to portable speakers. Light and battery-powered, they're great for picnics or hanging out on the stoop. Most also have a power-cord option, should you want to listen in the kitchen or office.

For big sound in a small package, look to Altec Lansing's $150 InMotion (3) (www.alteclansing.com). Though the line-in jack on its rear panel allows the unit to work with any portable, the InMotion's gleaming white shell and integrated IPod dock are tailored for IPod and IPod Mini owners. The speakers produce great depth, with nice treble and bass tones.

Monster's ISpeaker Portable (4) (www.monstercable.com) is smaller and lighter than the InMotion speakers, but the sound lacks the depth of Altec Lansing's model. At $60, it's much more affordable, and it can still bring that seductive ambience to a romantic evening in the park.

FM TRANSMITTERS

SINCE MOST CAR stereos don't have a line-in jack, you're stuck playing CDs instead of accessing the gigabytes of music inside your portable player. There is an option: An FM transmitter can send music from your portable to your stereo via an unused frequency. Tune to fuzz (107.1 in my car), set the device to broadcast at that frequency, and press Play. It works in the house, too. If you live near a large city, you may want to try before you buy—it can be hard to find a vacant band.

The $35 ITrip from Griffin (5) (www.griffintechnology.com) for IPods broadcasts a strong signal with little interference, and the music has good bass and treble tones. The unit looks like a natural extension of the player when attached to the headphone jack.

For other portables, the $50 TuneCast II Mobile FM Transmitter (6) from Belkin (www.belkin.com) performs the same function as the ITrip and has decent sound quality, but I had a harder time locking in the signal and encountered periodic sound interference. ■

Michael Gowan is a California-based freelancer. Richard Baguley is a senior associate editor at PC World.

PHOTOGRAPHS: KEVIN CANDLAND

THE PROMISED LAND?
PERHAPS NOT,
BUT ITS CAPACITY
WILL INSPIRE YOU.

INTRODUCING THE FIRST 8.5GB DOUBLE-LAYER DVD RECORDABLE DISC

Need a little inspiration? Verbatim's new Double-Layer DVD+R disc is the biggest thing to happen to DVD. This single-sided disc delivers nearly twice the storage of standard DVD media. Which means you can record up to 4 hours of DVD quality video or archive up to 8.5GB of data using a double layer DVD recorder. Plus, you get the guaranteed performance and reliability that's made Verbatim the preferred choice in DVD. So if you're looking for a product with the capacity to inspire, take a look at the new Double-Layer DVD+R disc. From the optical technology leader – Verbatim.

Verbatim.

For more information, contact us at 800-421-4188 or online at www.verbatim.com.

© Verbatim Corporation 2004

Newegg.com

http://www.newe

SONY

$2100.00

VAIO Z1WA Notebook
1.7MHz P4, 512MB, Model# PCGZ1WA

Western Digital

$235.00

250GB USB 2.0 External Hard Drive
Model# WDXB2500JBRNN

Microsoft

$335.00

Office Professions 2003
for Windows—Retail

SAMSUNG

$129.00

ML-1740 B&W Laser Printer
Up to 17PPM, 600x600dpi

SONY

$430.00

17" LCD Monitor
Model# SDM-S74/B

Canon

$499.00

PowerShot S500
5MP 3x Optical Zoom

FREE SHIPPING*
FedEx Express Saver Shipping

ONE MORE CUSTOMER
ON HIS WAY
TO NEWEGG.COM.

Hop in the car. Visit your buddy who has all the latest high-tech toys. Hit the electronics store. Stop by the newsstand and read some reviews. Then, when you know exactly what you want, buy it at Newegg.com. Great prices, fast shipping and unparalleled customer service that will make it your last stop every time.

newegg.com™

ONCE YOU KNOW, YOU NEWEGG.

ore than 100,000 reviews and testimonials.

BizRate

TO CHARGE ALL YOUR BATTERIES THIS IS THE ONE AND ONLY.

INTRODUCING THE LENMAR MACH 1 FUSION SPEEDCHARGER. LENMAR, DOING WHAT NO ONE ELSE CAN.

(SORRY AGAIN, SONY®.)

Meet Sony's one and only nightmare. The Lenmar MSC1U Mach 1® Fusion SpeedCharger™. It's the only all-in-one power source for just about every battery you own. It's also the one for batteries not yet made thanks to our upcoming series of simple adapters for multiple applications. The SpeedCharger refuels digital camera and camcorder batteries in as little as 30 minutes, or AA and AAA batteries in an hour. And with our NeoTherm2™ technology your batteries will perform better and last five times longer. We admit there are people who like the idea of buying different chargers for every different battery. They just all work for Sony.

To find the dealer in your area call 1-800-424-2703
www.lenmar.com/dworld

LENMAR®
BATTERY SOLUTIONS

Available at these retailers:

RITZCAMERA
Available only at Ritzcamera.com

Fry's ELECTRONICS

ONECALL

STAPLES
Available only at staples.com

©2004 Lenmar Enterprises, Inc.

Sony is a registered trademark of Sony Electronics Inc.

BY RICK POPKO

Spielbergs on a Shoestring

No millions? No stars? No problem! These part-time digital moguls make real movies for next to nothing. Here are their secrets.

STEPHANIE ALDRIDGE (center), an Ohio high school student, directs her fourth film, *Descend Into Darkness 2*. Her father, Ken, holds the boom microphone..

PHOTOGRAPH: DANIEL LEVIN

THINK YOU NEED $100 MILLION AND A BIG-NAME star to make a movie that lands in your local Blockbuster? Not anymore. With today's digital video technology, practically anyone with a digital video camcorder, a computer, and a story can produce and distribute a movie for next to nothing.

You want examples? Mark Pirro shot a film for $800 that was screened at this year's Cannes Film Festival. Jeff Krulik has created dozens of documentaries while working a day job. And 17-year old Stephanie Aldridge has made three feature films in between high school classes.

The emergence of digital video has been a huge boon to these and other independent filmmakers. Shooting and editing digital video is easier, faster, and a whole lot cheaper than shooting with film. Not only that, but the quality of images shot on video tends to be much higher than those shot on film like Super-8, an inexpensive and inferior film stock that many independent filmmakers formerly used.

You can buy 1-hour MiniDV tapes in bulk for about $5 each. Buying and processing 1 hour of 16mm film, on the other hand, can cost you $1200. In the days before digital video, low-budget directors would have to rent a camera for each project because movie cameras were far too expensive to buy. And when it came time to edit, they had to rent time on a flatbed editor and learn the intricacies of syncing the sound effects, music, and dialogue.

A professional-quality video camera, on the other hand, costs just $2000 to $3000, and the editing can be done on any modern computer with a thousand bucks' worth of software. The bottom line: You no longer have to mortgage your home and max out your credit cards just to make a movie.

MARK PIRRO

AGE: 48
HOME: Van Nuys, California
MOST SUCCESSFUL FILM: *A Polish Vampire in Burbank,* a comedy about a vampire who's paralyzed by the fear that his fangs are too small.
LATEST FILM COST: $800
HARDWARE: Sony DCR PC 100 camcorder, Lowell lighting kit, Compaq Presario 6000
SOFTWARE: Adobe Premiere 6.5 (video editing), Ultimatte Advantedge and Primatte for After Effects (blue screen effects), Adobe After Effects (general special effects), Syntrillium Cool Edit Pro and Sony Pictures Digital Sound Forge (sound editing)
WEB SITE: www.pirromount.com
DAY JOB: Occasionally edits other people's films; shoots demonstration reels used by actors and comedians to apply for jobs; films focus group meetings and industrial videos.

PHOTOGRAPH: ANNE SUMMA

And even if your video equipment isn't professional, it probably packs almost as much power. A relatively new sub-$1000 DV camcorder can produce home movies from a wedding or a family trip with high-quality images and decent sound.

Even Hollywood is jumping on the DV bandwagon. Movies like *Star Wars: Episode II Attack of the Clones,* Lars Von Trier's *Dancer in the Dark,* and *The Anniversary Party* (starring Jennifer Jason Leigh and Alan Cumming) were shot on video.

For filmmakers like Pirro, Krulik, and Aldridge, the move to digital video has meant freedom to indulge their own idiosyncratic, sometimes wacky ideas for films. Krulik told the story of a Jewish World War II soldier who found Hitler's top hat. Aldridge makes vampire stories. And Pirro's latest flick is about a giant pair of buttocks that rampages through Los Angeles.

LOW-BUDGET LEGEND

COMEDY/HORROR DIRECTOR Mark Pirro can produce a feature for less than most families spend on a summer vacation. And unlike most road trips, Pirro's films often turn a tidy profit.

In fact Pirro was making financially successful films well before the digital revolution began. His *Polish Vampire in Burbank,* released in 1985 when film was the only option, has grossed more than $2 million, Pirro estimates. The flick has been distributed all over the world and has been broadcast a number of times on the USA channel's *Up All Night.* Not bad for a movie that cost a mere $2500 to make.

Pirro continued making movies that, like *Polish Vampire,* were shot on Super-8 film, including cult hits like *Curse of the Queerwolf* and *Nudist Colony of the Dead.* But Pirro was never in love with the Super-8 format. "The stock was expensive, and the color reproduction often differed from roll to roll," he says.

In 1998 Pirro experimented with very early versions of digital video but found poor image quality, balky editing software, and audio that often got out of sync with the picture.

By 2000, though, Pirro concluded that DV technology was mature enough to trust with his magnum opus: *Rectuma,* the story of a man whose bottom grows to Godzilla-like size and roams the streets, leaving dead bodies in its foul-smelling wake.

Okay, so it's not cinema verité. But, says Pirro, "It's easier to make a movie about a giant ass that runs amok than it is to make a movie like *When Harry Met Sally* on this small budget."

The movie cost just $800 to make ($250 went to the maker of the prosthetic posterior), but critics have praised it. *Rectuma* includes "every posterior joke imaginable, and deep-cheese action stuff that won't disappoint the target midnight crowd looking for a taste-free time," wrote *Variety*'s Robert Koehler.

Shooting *Rectuma* on DV made many aspects of Pirro's job easier. "While I was editing *Rectuma,* I discovered I needed a shot of a helicopter. One day I heard one circling my neigh- ▶

TIPS FROM THE DIRECTOR'S CHAIR

Whether you're aiming for an Oscar or just want to make home movies that don't drive your relatives from the room, these tricks of the trade from independent filmmakers Mark Pirro, Stephanie Aldridge, and Jeff Krulik can improve your technique shooting and editing digital video.

- **DON'T GO ZOOM CRAZY.** An occasional slow zoom on an actor to heighten a dramatic moment is fine. Constantly zooming in and out of a shot quickly gets annoying.
- **MONITOR YOUR AUDIO** with a decent pair of headphones. Good headphones let you monitor for pops, clicks, and hiss that can occur if your microphone is too close to your subject. Once an anomaly is on your audio track, it's almost impossible to get rid of.
- **HANG A BLANKET** to improve sound. Shooting in a sparsely decorated room with no carpeting or drapes can make it sound like your actors are talking in an echo chamber. Hanging a blanket on the wall opposite a speaking actor helps absorb sound waves.
- **USE WHAT YOU'VE GOT.** Does your mother own a laundromat? Does your brother manage a pizzeria? Then write scenes that take place in a laundromat and pizzeria.
- **ADEQUATE LIGHTING IS ESSENTIAL.** But you don't need expensive, professional lights. Industrial halogen work lights from Home Depot work fine.
- **BUY A TRIPOD.** You can get away with an occasional handheld shot, but a camera that's constantly moving around will make your viewers seasick.
- **DON'T DEPEND ON CREDIT CARD** financing except as a last resort. If you're resourceful, you can make compelling movies for next to nothing.
- **CONSIDER HAVING SOMEONE ELSE** edit your work. If you try to do it all, it's easy to lose sight of what will hold an audience's attention. A fresh set of eyes brings new perspective and will often improve your film.

STEPHANIE ALDRIDGE

AGE: 17
HOME: Cleveland, Ohio
MOST SUCCESSFUL FILM: *Descend Into Darkness*, a modern story about a young woman who is bitten by a vampire. Her friends struggle to save the woman's soul before she is damned to an eternity in Hell.
CURRENT BUDGET: $2000–$3000
HARDWARE: Canon GL2 camcorder, Azden SGM-2X boom microphone, RadioShack headphones with microphone, Gateway Video Editing System PC.
SOFTWARE: Pinnacle Edition (software video editor), Pinnacle Impression (DVD authoring application), Pinnacle Commotion (special effects application), Cakewalk Home Studio (audio editing software)
WEB SITE: dwfind.com/43874
DAY JOB: High school senior

borhood. I grabbed my camcorder, went outside, taped the helicopter, went inside, and simply dropped the shot into the movie. Instant production value!" That kind of serendipitous special effect was next to impossible when Pirro was shooting on film.

How does Pirro do so much with so little? Simple: He doesn't pay people. His actors work for free. And Pirro has gotten volunteer help from an Emmy Award–winning special effects artist and a Grammy-winning composer.

He gives his volunteers a credit and a finished copy of the movie. If they're struggling actors, he helps them edit their demo reel. "If they're having fun participating," Pirro says, "they won't even complain about you not feeding them."

But Pirro has also learned when to be ruthless. Halfway through shooting *Polish Vampire in Burbank*, his volunteer lead actor turned into a "prima donna," Pirro says. The man eventually quit, forcing Pirro to rewrite the movie and take over the lead role. Now, when Pirro sees any sign of overweening ego, he fires the actor on the spot.

If any lead role could go to an actor's head, though, it may be the one in Pirro's next project. He's currently working on a comedy about the return of Jesus Christ tentatively titled, *Jesus, the Revenge*. (Tagline: "He's not just mad. He's cross.") And no, Mel Gibson is not producing it.

TEEN SCREAM QUEEN

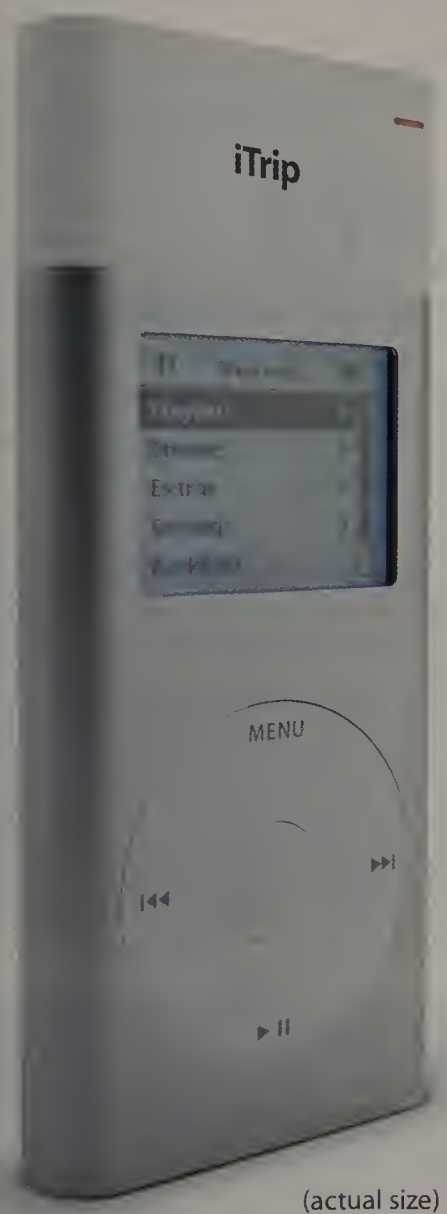
SOME YOUNG CHILDREN who watch scary movies have nightmares. Young Stephanie Aldridge had a dream: to make her own scary movies.

The filmmaking bug bit Aldridge, now 17, when she was 5 years old and a devoted viewer of horror films, particularly the *Subspecies* series, which chronicles the adventures of a young woman bitten by a Romanian vampire.

Aldridge met one of the stars of *Subspecies*, Denice Duff, at a sci-fi convention in Akron, Ohio a few years ago. "Denice was my idol," Stephanie says. "I went home wanting to become an actor. Over time, the acting bug led me to begin writing and directing my own films."

Pulling together $200 in allowance money and borrowing a camcorder from her lead actress, Aldridge (just 14 at the time) shot her first feature, *Blood Beneath the Moon*, about a group ▶

PHOTOGRAPH: DANIEL LEVIN



(actual size)

Let me take you on a trip...

Quick, where do you most often listen to music? In your car, right? The easiest way to enjoy all of that music in your car is the Griffin iTrip mini. Snap iTrip on your iPod mini and suddenly your music is filling up your next road trip, daily commute or business trip - right through the built-in FM stereo of any car. Buy an iTrip mini for your iPod mini and your favorite song will always be on the radio.

iTrip mini

$39.99

FM Transmitter for iPod mini

- The **only** FM Transmitter designed exclusively for the iPod mini
- Choose any empty station from 87.7 to 107.9, and change your iTrip mini stations directly from the iPod mini
- Draws power from the iPod mini, no batteries ever needed – or wasted
- iTrip for standard (white) iPods are also available. Please visit us online at griffintechnology.com for more info

iCurve

$39.99

Laptop Desktop Stand

- Raises notebook screen to eye level - no more sore neck from looking down
- Creates room on the desktop for your favorite USB keyboard and mouse - wireless versions work great
- Keeps your notebook running cool (and loud fans off) with 360° airflow

iTalk

$39.99

Voice Recorder for iPod

- Turn your iPod into a digital voice recorder with thousands of hours of recording time
- Automatic Gain Control assures the best possible signal level for recordings
- Features internal microphone and built-in laptop quality speaker for playback
- Connect an external microphone or even headphones to the built in pass-through mini jack connection on top

iMic

$39.99

USB Audio Interface

- Record your old records and tapes to play in iTunes, put on your iPod, or burn to CDs
- Connect any keyboard, guitar or microphone directly to GarageBand for high quality recording
- Use line level output to connect your Mac to a stereo or external powered speakers

Another great idea from GRIFFIN

Buy now at **www.griffintechnology.com**

of friends who rent a house formerly inhabited by a mad scientist.

Aldridge shot her follow-up feature, *Slice 'n' Dice*, for $2000 using Canon's GL2 camcorder; the movie stars Aldridge and film enthusiasts she'd met at sci-fi and horror conventions.

The high school senior is currently shooting *Descend Into Darkness 2: Battle of the Undead*, about a woman who is bitten by a 500-year-old vampire. The film stars Aldridge and B-movie veteran Suzi Lorraine, star of such film classics as *Busty Cops*, *Revenge of the Necktie Strangler*, *Day of the Ax*, and *Satan's School for Lust*.

Aldridge says the key to a filmmaker's success is what happens before the cameras start recording—coming up with a good story. "It doesn't matter how good of a director you are. If your script stinks, so will your movie," Aldridge says.

Like Pirro, Aldridge doesn't pay her actors, but she does take care of them. Her father will sometimes cook for the cast and some of the stars will stay with the Aldridges during shooting.

Finding people willing to commit time to finishing a project is one of the toughest parts of filmmaking for Aldridge. "Some people I've worked with don't know what is really required to make a film," she says. "They'll show up for a day or two, but when they see how long the process takes, they quickly lose interest." But in Aldridge's latest film, actress Dawn Desiree makes the ultimate commitment—twice. Desiree dies once as a character named Elizabeth, then again as Kristen. ▶

JEFF KRULIK

AGE: 43
HOME: Washington, D.C.
MOST SUCCESSFUL FILM: *Heavy Metal Parking Lot*, a documentary about drunk and stoned rock fans partying in a parking lot before a 1986 Judas Priest concert.
CURRENT BUDGET: $10,000
HARDWARE: Canon XL1 camcorder, Canon ZR50MC camcorder, IMac G4
SOFTWARE: Avid Xpress DV, Apple IMovie, and Apple Final Cut Pro (all video editing)
WEB SITE: www.planetkrulik.com
DAY JOB: Freelance TV producer and archival researcher for documentaries such as *Fog of War*.

PHOTOGRAPH: KATHERINE LAMBERT

With an award-winning, high-definition picture and new sizes to choose from...

one line fits all.

42"

50"

55"

63"

The Fujitsu Plasmavision SlimScreen® Series.

Size matters. That's why we offer so many. But so does quality. Our exclusive AVM chip creates a vivid picture with the highest brightness, contrast and color saturation. A high-definition picture so spectacular, our technology won an Emmy® Award! You can find the SlimScreen Series exclusively at an authorized Fujitsu retailer. To find one near you, call 1-888-888-3424 or visit www.plasmavision.com, and find the perfect fit.

AVM Advanced Video Movement

IT'S WHAT'S INSIDE™

THE POSSIBILITIES ARE INFINITE

FUJITSU

Three-year limited warranty includes parts and labor and one year on plasma display element. Fujitsu General America, Inc.

KEN BURNS OF THE BIZARRE

"EVER SINCE I WAS YOUNG," Jeff Krulik says, "I always loved the unusual, the weird, and the strange, and I gravitated towards those who marched to their own beat."

As a filmmaker, Krulik has become a chronicler of the wacky and obsessed. His subjects have included Ralph Whittington, a retired Library of Congress curator who catalogued, indexed, and cross-referenced his massive collection of pornography, then sold it to the Museum of Sex; and Neil Keller, whose life's mission is to gather souvenirs about Jews anywhere in public life—whether they're singers, gangsters, or bullfighters.

Krulik's film *Hitler's Hat*, about a Jewish GI who found Adolf Hitler's top hat in the Fuhrer's Munich apartment, has been lavishly praised. "In the film, the hat becomes both souvenir and symbol," the *New York Times*' A.O. Scott writes, "suggesting that fascism was defeated not just by courage and force of arms, but also by pluck and good humor."

But Krulik has made a virtual franchise out of his cult hit, *Heavy Metal Parking Lot*, an embarrassing record of the drunken antics of Judas Priest fans. The TRIO cable television network bought the concept and shot episodes about fans of Cher, 50 Cent, and other entertainers. And Krulik has continued to make his own spin-offs, including *Harry Potter Parking Lot*, *Neil Diamond Parking Lot*, and his current project, *Michael Jackson Parking Lot*, filmed at Neverland Ranch and outside hearings in the singer's child molestation case. That last project is scheduled to show on TRIO in September.

"Cult status is a good thing," Krulik says. "It's better than not being recognized at all. But even with the recognition, it's still been difficult for me to find mainstream commercial work."

With the exception of two shorts paid for with grant money, Krulik's works have been self-financed. He works as an independent TV producer and freelance archival researcher. He worked on the Academy Award–winning documentary *Fog of War*, finding historical footage at the National Archives.

Krulik's style consists of pointing his camera at his subjects and letting them explain themselves, then interspersing that footage with archival film footage and screens of related text.

"I was doing reality TV before it existed," Krulik says. "I never put words in people's mouths; I'm never judgmental about people. Everybody's in on the joke."

It's a style that's aided by digital video technology. Because videotape is so inexpensive, Krulik can simply let his camera roll, capturing his subjects more naturally than if he were shooting on film. The unfortunate consequence of this strategy is the countless hours of footage the filmmaker has to sift through when he finally sits down to edit a project.

As a documentarian, Krulik doesn't have to deal with the vagaries of volunteer actors. But his real-life subjects will sometimes derail a project. A recent project about Faith Dane, a perennial Washington mayoral candidate and former Broadway star, started with great promise. But Krulik never had a written agreement with his subject. After he shot many hours of tape, the two had a disagreement, and the project remains in limbo.

Krulik streams all of his films for free on his Web site, www.planetkrulik.com. The novel distribution technique "generates no income," Krulik says with a laugh. "But I like the technology. It's like having your own television station." ■

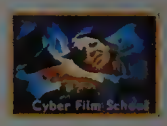
Rick Popko is a freelance writer and digital video producer. His first feature, Monsturd, *was shot on digital video and produced for $3000 and is distributed through Elite Entertainment (www.elitedisc.com).*

ONLINE HELP FOR AMATEUR AUTEURS

Making your own movie often means being director, cinematographer, star, and caterer. But you can find helpful information online.

PRODUCTION AND POSTPRODUCTION-RELATED INFORMATION

B-Independent (www.b-independent.com)
Indie Club (www.indieclub.com)
DV Magazine (www.dv.com)
2-Pop (dwfind.com/43876)
IndieWire (www.indiewire.com)
Cyber Film School (www.cyberfilmschool.com)
Filmmaking.com (www.filmmaking.com)



SCREENPLAY RESOURCES

Zoetrope (www.zoetrope.com)
Trigger Street (www.triggerstreet.com)

DISTRIBUTION RESOURCES

Hollywood Creative Directory (www.hcdonline.com)
CustomFlix (www.customflix.com)

PLACES TO STREAM YOUR MOVIES OVER THE INTERNET

IFilm (www.ifilm.com)
Atom Films (www.atomfilms.com)

Digital Lifestyle
Reloaded

Nero 6 Ultra Edition, the ultimate all-in-one digital media solution, is loaded with over 14 applications for all your **Audio, Video, Photo, Data** and **Backup** needs. Capture, copy, edit, author and burn your photos and home videos. With Nero 6 Ultra Edition, the world's first DVD+R Double Layer enabled software, you can backup over 10 movies to one Double Layer DVD without any loss of quality using Nero Digital™ technology*.

Try the new addition to the Nero family of products, **Nero PhotoShow Elite,** the easy and complete photo experience. Visit **www.nerophotoshow.com** for additional information.

Nero – Simplify Your Life

WWW.NERO.COM

Available now at:

* Does not copy DVDs with copy protection.

Introducing the World's First

FireWire Flash Drive

- Up to 1GB
- Solid State, Driverless Storage
- Only 3" long, weighs only 30g
- Patent Pending

The Kanguru Fire Flash™

~ High Speed, Portable Storage for Macintosh™, Windows™ and Linux ~

Find these and other quality Kanguru products at:

KANGURU Solutions™ **www.kanguru.com Call: 888.KANGURU**

PC Connection® **pcconnection.com Call: 888.213.0260**

Popular Phonetography

How to take amazingly good pictures with a camera phone ...and other slick tricks for cool phones.

BY TODD OGASAWARA

ILLUSTRATIONS BY GLENN MITSUI

"A Camera Phone Took That?!"

Small, grainy, really lame: Camera phones have a rep for taking poor pics. Try these tips, though, and your pals will rave about your shots.

WIDEN YOUR HORIZONS

FIVE SEPARATE photographs used to create a single panoramic image.

OFTENTIMES, FINISHED photos don't look like what we remember seeing when we took the pictures. The camera's lens just isn't as good as our own two eyes for capturing the wide field of view or the depth of a scene. But not to worry: You can fix that.

Just take multiple photographs of a scene from right, center, and left (or up, middle, and down). Don't move your feet when you turn slightly to take the shots, and overlap the images a bit. Just as with standard digital camera pictures, you can use photo-editing software to stitch the shots together, and voilà: You get a great panoramic view or skyscaping vertical shot that captures a sense of the object's height.

You can use a similar technique to restore a feeling of depth by starting your shot just beyond your toes and then tilt-

FINAL STITCHED panoramic photo.

BAD LIGHTING MADE GOOD

AS YOU'VE PROBABLY noticed, camera phones lack a flash (although some with strobes are coming in the next year). So if you want to avoid dark, grainy images, make sure your subject has enough light on it. Just as with a standard digital camera, take practice shots to see what you typically get, and learn your camera phone's limitations.

With good lighting you often can fill about two-thirds of the frame with a full body shot and get a decent photo. In low light, however, get close for a head-and-shoulders portrait. You'll still want to use an editing program like Elements to get more sharpness by applying filters such as Unsharp Mask—I advise using it on nearly all phone shots.

PICTURES WITH PUNCH

I TOOK THE PHOTO of the flowers (below) in bright daylight, but the colors were off. So I applied a series of filters and tools to improve the image. I used Unsharp Mask first, then Gamma Correction to fix common underexposure (too dark) or overexposure (too bright) problems (adjust Brightness/Contrast if there's no Gamma filter). Next I applied Color Balancing to fix color problems like green skin tones, used Noise Filter-Edge Preserving Smooth to reduce pixelation, and finally increased Saturation to restore vivid color. You may miss subtle changes from one step to another, but you will see the improvement in the final image.

THE ORIGINAL flower image.

THE FINAL flower image.

BACKLIT shots often yield dark, unrecognizable subjects, even close-up.

Make sure the light isn't behind your subject or you'll usually see just a dark silhouette, not a detailed image. In some cases, however, a backlit shot will work well, as in the image of the canoe on the next page. I took that picture at sunset on my way home from the grocery store (life in Hawaii gives me constant reminders of why I want a camera with me at all times).

Night pictures, at a concert or other event, are going to be a problem unless you're very close-up. The bright lights, the plastic protective covers over the cheap lenses in most

Visit www.pcworld.com
AOL Keyword: PC World

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 104 BOONE IA

POSTAGE WILL BE PAID BY ADDRESSEE

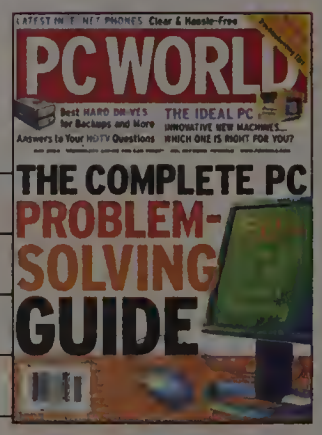
PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 37558
BOONE IA 50037-2558

PC WORLD

SAVE 76%

YES! Please enter my one year (12 monthly issues) subscription to *PC World* at the low rate of only $19.97. I will save **76% OFF** the annual newsstand rate and receive *PC World's* Windows Tips Mouse Pad **FREE** with my order.



NAME (Please Print) _____

ADDRESS _____

_____

CITY _____ STATE _____ ZIP CODE _____

EMAIL (Optional) _____

To receive a FREE PC World email newsletter and updates about your subscription to PC World magazine, please provide your email address.

FOR FASTEST SERVICE CALL: 1-800-825-7595 or fax 515-432-6994

Offer good in the US only. In Canada, please add $12 USD per subscription for postage, plus 7% GST (#R124669680). All other countries send $49.97 to PC World, P.O. Box 37560, Boone IA 50037-0560 USA. Savings based on annual US newsstand rate of $83.88.

J4DN2CT71

A VERTICALLY stitched shot can vividly capture the height of an object.

ing your head up to take segments out into the distance.

To create your own merged shots, use any of various low-cost or no-cost tools, such as Adobe Photoshop Elements ($99, dwfind.com/43568), JASC PaintShop Pro 8 ($74, dwfind.com/43566), or the GIMP (GNU Image Manipulation Program, free, www.gimp.org). You may also want to try stitching-specific utilities such as Arcsoft's Panorama Maker 3 ($40, dwfind.com/43570) or Pixtra's Pano Stitcher 1.4 ($30, www.pixtra.com).

DIALING IN STYLE: PHONES TO CRAVE

MOTOROLA V600
Street: $300
dwfind.com/43578
Midlevel smart phone/camera phone with integrated VGA camera and video recorder, plus Bluetooth capability. Available from AT&T Wireless and Cingular.

NOKIA 7610
Street: $449
dwfind.com/43576
Midlevel smart phone/camera phone with 1-megapixel camera and up to 10 minutes of video, plus USB, Bluetooth, and a RS-MMC flash card slot. Available from Cingular.

SONY ERICSSON T637
Street: $199
dwfind.com/43580
Basic camera phone (sub-VGA) with ergonomically placed camera buttons and excellent Bluetooth capabilities. Available from AT&T Wireless and Cingular.

camera phones, and the lack of exposure control create flares in a dim to dark area. Most phones lack a good optical zoom, too, so if you're far from your subject, you'll often end up with a shot of a tiny, blurry splotch in the dark. But don't compensate with a digital zoom unless you're not planning to modify the image—it will enlarge pixels to make things look closer but will also reduce sharpness. Get as close as you can, then crop, use filters such as Unsharp Mask, and heighten contrast to get a better image. Note, though, that even with good indoor lighting, faraway people probably won't be recognizable.

SOME SILHOUETTED shots do look good.

MOBLOG MANIA

YOU CAN NOW take snaps of every minute of every day, so why not share? Enter moblogs, mobile Weblogs or journals that you can modify from your mobile phone or PDA. Photo moblogs are the most common, and the sites let you mail photos directly from your phone—no need for a PC. And many of the services are free (so far). You do need a PC to register and establish a user name and password. You may also need to create a password for when you update the site from a phone. To change your area, you'll typically mail a photo from your phone using an e-mail address like so: Username.password@sitename.com. The mail's subject line becomes the photo's caption on the site.

FROM PHONE...to photo moblog.

It usually takes less than an hour for the photo to appear in your moblog, ready for worldwide viewing. Some sites also offer private areas for your friends; these require password access. Popular sites include Buzznet (www.buzznet.com, pictured above), Textamerica (www.textamerica.com), and Phlog.net. ▶

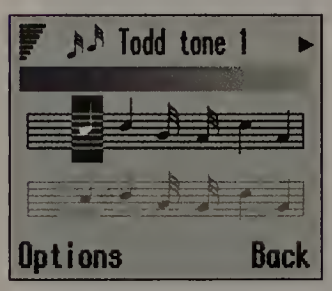
PRODUCT PHOTOGRAPHS: KEVIN CANDLAND

Off-Camera Fun

Ready to go beyond the basics? Discover your phone's hidden talents.

MUSIC TO YOUR EARS

DON'T SETTLE for a dull ring—customize! Check our "Sites for Phone Fanatics" (below) for cool places to shop for your favorite tuneful tones—they generally cost from 60 cents to $2—or even compose your own if your phone lets you. Ring tones are usually MIDI (.mid) or WAVE (.wav) files. You can use an audio editor like the free Audacity (dwfind.com/43574) or Roxio's $100 Sound Editor (part of Roxio Easy Media Creator 7, dwfind.com/43572) to extract a short segment of a recording (you don't really want a 3-minute ring, do you?) and convert it to a .wav file. If you feel creative, use a MIDI-generator/recorder or a MIDI-capable instrument like a synthesizer keyboard to compose your ringing opus. See the user manual for the best way to get the file to your phone.



SOME PHONES let you create your own tones.

If you're buying, you'll generally get simple tones (single note at a time) embedded in an SMS message. Complex (polyphonic) rings require a data service, since you have to access a Web site to download them.

NOTES TO SELF

TAKING NOTES ON a mobile phone (if yours even has the capability) can be a chore. So take a snapshot of the info instead. Just make sure that you're close enough to capture a readable image. Some camera phones can also record video with audio, though that's generally limited to about 10 seconds. You may be surprised to find what you can say and see in those seconds, however. For example, if you are comparison shopping, you can usually say the name of the store and item, and its price. For me, this visual memo (right) was also a great way to get a thumbs-up or down of a new bike from the prospective owner, my daughter.

USE VISUAL memos to take good notes as you comparison shop.

And stay tuned for cell-phone karaoke, which will hit Japan first, then sing its way here in the next twelve months or so.

BLUETOOTH BOUNTY

BLUETOOTH HASN'T caught on all that well on the PC side (yet), but it can be a real boon to your cell phone. Pair your Bluetooth phone with a Bluetooth PDA, and not only can you use the PDA to offload some shots, also you can set it up so you can dial your phone from your PDA's address book. That way you save some cell phone memory (no need to duplicate and constantly sync all your contacts).

Some new cars—notably Toyota's Prius and Landcruiser and Acura's TL—offer Bluetooth also. It's usually available as part of the DVD navigation system option, and it also will let you pair certain Bluetooth phones with the car. That way, you can answer the phone using controls on the wheel, listen to the call through the car's stereo speakers, and talk via a built-in microphone. Bye-bye, headset.

SITES FOR PHONE FANATICS

For ring tones:

Handango (also has games and software): www.handango.com
Zingy: www.zingy.com
3Gupload.com: www.3gupload.com
Katazo: www.katazo.com
Ringtone America: www.ringtoneamerica.com
Ringtones.com: us.ringtones.com

For camera phone information:

picturephoning.com: picturephoning.com
Reiter's Camera Phone Report: www.cameraphonereport.com

PAC 'N' RUN

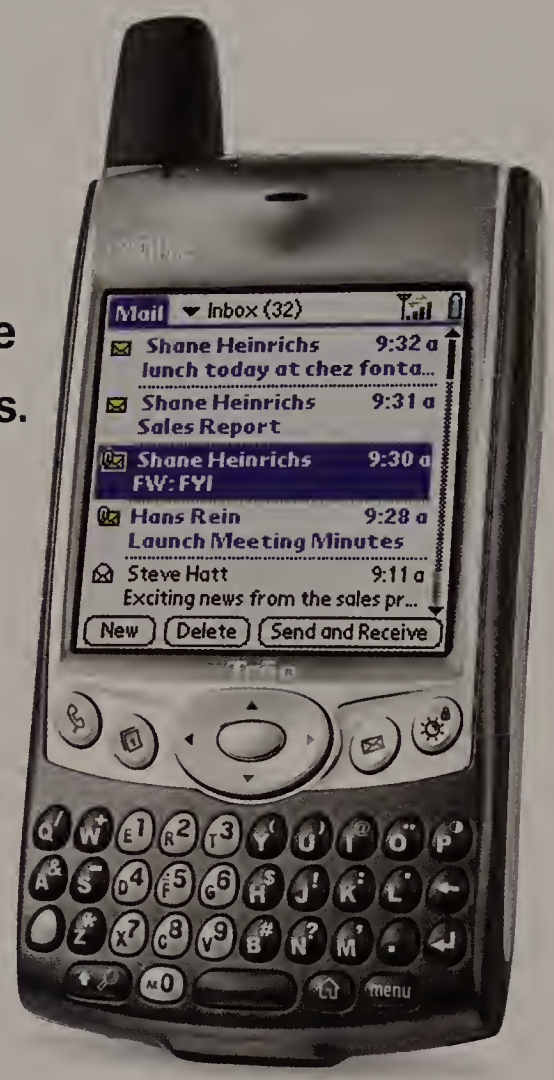
ARE YOU READY to venture beyond arcade nostalgia and become the game? Well, you can: The Pac Manhattan group takes the concept of the old Pac-Man game into the real world by laying the game's grid over real city blocks. Players take the roles of Pac-Man and the Ghosts to the streets while PC-bound players in a control room keep everyone in contact using cell phones (yup, real people are doing this). To download the Pac Manhattan City Kit, go to the group's site (www.pacmanhattan.com) and then you can try it in your own town.

MORE TO EXPLORE

TO GET the real lowdown on your phone, always check the bundled CD-ROM for software goodies, and surf over to the manufacturer's Web site for updates or free downloads of apps and games. But remember that although your phone may have Web or gaming capabilities, you'll have to get a service plan to match—data services for Web surfing, mail, and the like often are an added cost to voice service (you may get charged extra for video messaging, too). ■

Todd Ogasawara, editor of MobileViews.com, phones it in from Hawaii.

Suddenly the idea of email on a cell phone seems obvious.



Trēo 600

Push one button on the Treo™ 600 smartphone from palmOne and it happens. Suddenly you're on email* – sending, replying, communicating. All with an integrated, easy to use QWERTY keyboard. No complex key punching or endless text scrolling. No booting up or waiting for applications to launch. Just updated email, ready when you are, right out of the box.* The Treo 600 is also a full-featured mobile phone, a Palm Powered™ organizer and a digital camera. It lets you text message and browse the Web.* And yes, it really is small enough to slip in your pocket. Learn more at www.palmOne.com or visit your local service provider. Finally, a smartphone that really is smart.

Sprint. AT&T Wireless cingular T-Mobile palmOne

*Wireless service plan required. Email and web require data services and ISP, and additional charges may apply. Wireless coverage may not be available in all areas. Screen image simulated. ©2004 palmOne, Inc. All rights reserved. palmOne, Treo, and Palm Powered are among the trademarks or registered trademarks owned by or licensed to palmOne, Inc. All other brand and product names are or may be trademarks of, and are used to identify products or services of, their respective owners.

- Provides leading-edge 32-bit performance for music, video, and games and is ready for future 64-bit software
- Improves security against certain types of viruses, with Enhanced Virus Protection for Microsoft® Windows® XP SP2
- Conserves power and operates quietly with AMD Cool'n'Quiet™ technology

VROOM VROOM.

THE ONLY MICROSOFT® WINDOWS® - COMPATIBLE 64-BIT PC PROCESSOR AVAILABLE TODAY

February 2004 PC WORLD Best BUY Awesome 6300

May 2004 PC WORLD Best BUY Ultimate M5[64]

July 2004 PC WORLD Best BUY Ultimate M6

ABS® Ultimate M5[64]

AMD Athlon™ 64 Socket 939 3500+ Processor with HyperTransport™ Technology*
Up To 2000MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Cooler Master CAV-T01-WWA Case w/Side Panel & Sound Pressure Device

Antec True 480W Power Supply

ASUS A8V Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Free Upgrade to Corsair XMS 1024 MB PC3200 DDR SDRAM Memory

LeadTek nVIDIA® GeForce 6800 A400 TDH 128MB DDR Video Card

Realtek ALC850 8-Channel Codec Audio

Maxtor 160GB RAID 0 (2x80GB) 7200RPM SATA150 Hard Drive w/8MB Cache

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Logitech Premium Desktop USB/PS2 Keyboard & Cordless Optical Mouse

Microsoft® Windows® XP Home Edition

Regular Price ~~$1949~~ Sale Price $1899

ABS® Ultimate M5

AMD Athlon™ 64 3400+ Processor with HyperTransport™ Technology*
Up To 1600MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Silverstone Black Aluminum Face Mid-Tower Case

Antec True 480W Power Supply

ASUS K8V SE Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Free Upgrade to Corsair XMS 1024MB PC3200 DDR SDRAM Memory

LeadTek nVIDIA® GeForce 6800 A400 TDH 128MB DDR Video Card

ADI AD1980 5.1 Surround Sound with Dolby Digital

Maxtor 160GB RAID 0 (2x80GB) 7200RPM SATA150 Hard Drive w/8MB Cache

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Black Microsoft Internet Keyboard & Microsoft Intellimouse Optical

Microsoft® Windows® XP Home Edition

$1749

ABS® Awesome 5300

AMD Athlon™ 64 Socket 939 3500+ Processor with HyperTransport™ Technology*
Up To 2000MHz System Bus

The ONLY Windows-compatible 64-bit PC processor

Cooler Master Centurion 5 "CAC-T05-WBA" Mid-Tower Case w/ Side Panel

Antec True 480W Power Supply

ASUS A8V Deluxe Motherboard w/Gigabit LAN & IEEE 1394

Corsair XMS 512MB PC3200 DDR SDRAM Memory

ATI Radeon 9800 Pro 128MB DDR Video Card

Maxtor 80GB 7200RPM SATA150 Hard Drive w/8MB Cache

Realtek ALC850 8-Channel codec Audio

SONY 16X DVD-ROM

NEC 8X Dual Layer DVD+/-RW DVD Recordable Drive

Logitech Premium Desktop USB/PS2 Keyboard & Cordless Optical Mouse

Microsoft® Windows® XP Home Edition

$1599

ABS® Recommends Microsoft® Windows® XP

Get $25 off any advertised system! Online Only.
Use Promotion Code: 25PW10 at Checkout

www.abspc.com/pw10

800.876.8088

Always Better Service

- 1 Year Limited Parts Warranty
- 30 Days Money Back Guarantee
- Hours: Mon-Fri 8:30AM-5:30PM PST
- 24/7 Technical Support: 888.983.9988
- Lifetime Toll-Free Tech Support

Price, specification, and terms are subject to change without notice. Illustrations may not accurately represent exact configurations priced. ABS® is not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. Onsite service may be provided by contracted third party provider. Technician will be dispatched if necessary following phone support. © 2004 All rights reserved. AMD, the AMD Athlon, AMD Arrow logo and combinations thereof are trademarks of Advance Micro Devices.

High-Def Recording Hassles Instead of your VCR flashing 12:00, it ought to flash, "You can't record that." BY MICHAEL DESMOND

AS LONG AS there have been technologies to record and play back media, the companies that lay claim to content have done everything they can to stop you and me from enjoying it. Witness the panic from studios when the first VCRs emerged. Or consider the ill-fated DivX (pay-per-view DVDs) effort, thrown up by a greedy retailer hell-bent on cashing in on the early momentum of DVDs. It makes you wonder if Gutenberg had to fend off wild-eyed monks screaming about printing-rights management.

Those "threatening" technologies went on to become huge moneymakers for the companies that had so bitterly fought them. VHS decks launched the golden age of video rentals, where even the worst movies can turn a buck. My local video store has a Mary-Kate and Ashley Olsen section. *A whole section!* And DVDs are an absolute gold mine for studios that have rereleased countless titles.

High-definition TV is now emerging as a viable technology, and products for recording HD content are emerging alongside. These hard disk–based digital video recorders (DVRs) and Digital-VHS (D-VHS) videocassette recorders can capture the full 1080 interlaced or 720 progressive video signal. Imagine recording, in full high definition, your favorite team's performance in the Super Bowl or an entire season of *The Sopranos*.

PORT PROBLEMS

ALAS, HOLLYWOOD is doing its level best to restrict the use of HD outputs on every type of consumer video gear, from set-top boxes to HD-capable DVRs. The Motion Picture Association of America (MPAA) has successfully blunted adoption of FireWire, the high-speed digital transport better known on camcorders and PCs, according to Fred von Lohmann, senior legal counsel for the Electronic Frontier Foundation. FireWire is perfect for moving high-def content among electronics devices such as set-top boxes and DVRs. Unfortunately it does too good a job.

"It's the usual mess," says Avi Greengart, senior analyst for the Home Theater Research Service at Jupiter Research. "Hollywood would still like to live in a world where it could control how you watch any of its programming."

I found this truth out the hard way, when I tried recording HD with JVC's HM-DH4000U, a D-VHS VCR. The

Mike's Rants and Raves

Do-It-All DVD Recorder The Malata DIVA-2 crams a DVD-ROM player and an all-formats DVD±RW recorder into a single chassis. It won't let you copy DVDs directly; I checked. But you can connect the S-Video out to the S-Video in with a cable and make sneaky dubs of DVDs that way.

You can even stream videos and TV shows from the Internet (served up by Malata's own service) to your PC using the DIVA-2. dwfind.com/43588

I Want My HDTV! Here in Burlington, Vermont, Adelphia Cable offers about five channels of HD programming for an extra ten spot each month. But the lack of over-the-air HD channels here means I'll have to jump to DirecTV to get its exclusive NFL Sunday Ticket package.

DirecTV costs more than Adelphia, offers fewer HD channels, and saddles me with an annual contract and more than $300 in setup costs. Time was, you could order Sunday Ticket à la carte, but no more—it's all package deals.

ILLUSTRATION: ZOHAR LAZAR (TOP); ZACH TRENHOLM (BOTTOM)

JVC's HM-DH4000U makes prepackaged HD movies look great; recording's another story.

$1000 deck made prepackaged high-definition movies look stunning—*Backdraft,* with all its fire and action, made particular impact; you can really see a difference between DVD and HD-VHS. But I had also invested in Adelphia Cable's HD package and hoped to tape baseball games in high definition.

FUSSING WITH FIREWIRE

I SPENT NEARLY two days looking for a way to record HD with that VCR. But while my 36-inch Sony WEGA TV uses analog-component video ports to accept HD signals, the D-VHS VCR uses FireWire. Neither of the set-top boxes I tried—Scientific Atlanta's Explorer 3250HD or its Explorer 8000HD—would output high-definition video via FireWire.

So I called Todd McDuff, who manages the electronics department at The Superstore in Williston, Vermont. When I asked if I might borrow an HDTV tuner to connect to the D-VHS recorder, he said the store had not one piece of HD equipment with the requisite FireWire output.

And even when you do find FireWire ports, they may not work. The Scientific Atlanta 8000HD has them, but they're disabled. The PC World Test Center in San Francisco has a Comcast set-top box for TV testing; its FireWire ports work (for now), but Comcast may disable them.

Matt Stevens, an independent film producer from Connecticut, has waged a battle with media and consumer electronics companies to record HD content at full fidelity. In order to copy recorded shows to his D-VHS VCR, he purchased a Dish Network Player-DVR 921 digital video recorder, which had FireWire ports when it was introduced.

But when Stevens learned that Dish Network had quietly removed the FireWire ports from the DVR 921—preventing him from outputting to the VCR—he was livid. "I bought the DVR 921—one thousand bucks. I forced them to give me a refund," Stevens complains.

Yet another connector—the High-Definition Multimedia Interface (HDMI)—is emerging. HDMI piles copy protection onto the DVI digital connection familiar to owners of flat-panel PC monitors. HDMI does a lot of good things—like combining audio and video in a single cable and pushing enough bandwidth to support even progressive-scan 1080 resolution—but you won't find many HDMI-capable TVs or receivers for sale yet. Most important, HDMI enables studios to lock up content, meaning recording over it may be impossible—or greatly limited, depending on how the content is flagged by the broadcaster (see "Waving the Broadcast Flag," right).

CAN'T COPY THAT

THE MPAA HAS pressed hard to restrict unfettered access to HD signals, fearing massive losses should content end up on the Internet. The group has even lobbied Congress to mandate that component-out ports—the only available HD connections on millions of HDTVs—be dumbed down to standard definition (SD) TV levels to prevent unauthorized copying.

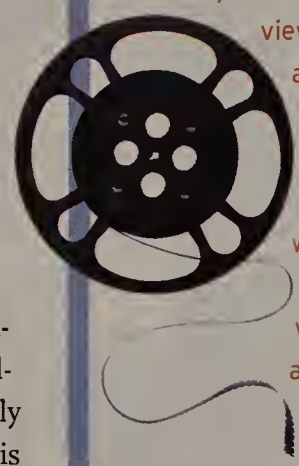
In April the FCC began requiring that cable operators provide set-top boxes with FireWire outputs—a welcome development even if these ports will likely be encumbered with copy protection. However, the 8000HD set-top box likely won't receive a firmware update to enable its FireWire outputs until the end of this year or early next. Even then it will continue to bug me that I have to watch HD shows on someone else's schedule. ■

Digital World Contributing Editor Michael Desmond is based in Colchester, Vermont.

WAVING THE BROADCAST FLAG

IN JULY 2005, broadcasters will begin to use the broadcast flag, a set of recording rules embedded in digital television programming. All products made after then will have to recognize and respond to the flag. Although some of the products you buy now *may* work with the flag, devices purchased last year probably won't. As a result, a lot of good equipment could become obsolete.

Depending on a content creator's wishes, you may be able to record a program (say, to a digital video recorder); record it and then make one copy (say, to a DVD); or copy it all you want (local-access channel content, perhaps). Or you may not be able to record it at all (the likely case for things like pay-for-view). The flag can be applied to any digital content, HD or not.



But, in the short term, the bigger issue will be how devices made before July 2005 will work with devices made after. Say you record an episode of *The West Wing* to a flag-enabled HD-DVR. If you try to save it to DVD using a burner that doesn't support the flag, you'll get garbage. You may be able to get around this using an analog connection (the so-called analog hole), but you won't get the same quality.

You will be able to record a flagged episode with a digital device that does *not* recognize the flag. And if you could export the show to a flagged device, again, no problem. But, as I've noted, most unflagged devices lack the ports necessary to make external copies.

PHOTOGRAPH (TOP): BARRY MUNIZ

CLUTTER TO CASH.

"PC Selling Center helps me get more money than I expected and the process was easier than I anticipated."

Coleman Andrews - eBay User ID: calicoleman (19)

There's a gold mine in your garage (or maybe in your closet, or even on your desk). Whether trading in your current system for that hot upgrade, or just watching your old gear gather dust, you should try a great new free resource from PC World and eBay that makes selling your desktop or notebook super convenient.

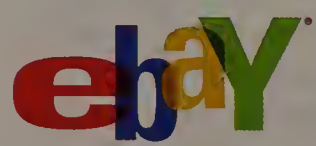
We're talking fast, easy—and right from home. Simply go to eBay's new PC Selling Center at www.ebay.com/pcsellingcenter and use innovative no-cost tools designed to let you appraise your system's resale value, create a profile of your system for posting it on eBay and completely erase deleted files on your hard drive!

Need more? How about packaging and shipping services? eBay's new PC Selling Center can even connect you with a local eBay expert to help with your sale.

Turn your clutter into cash now. Go to:

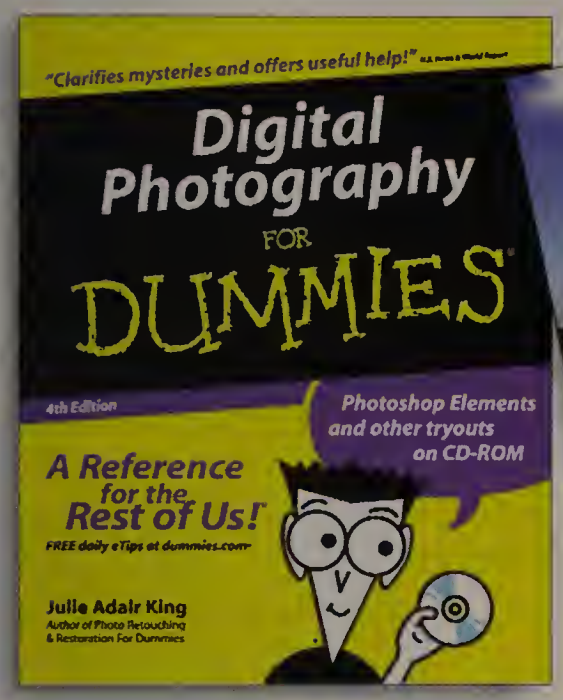
www.ebay.com/pcsellingcenter

Brought to you by:

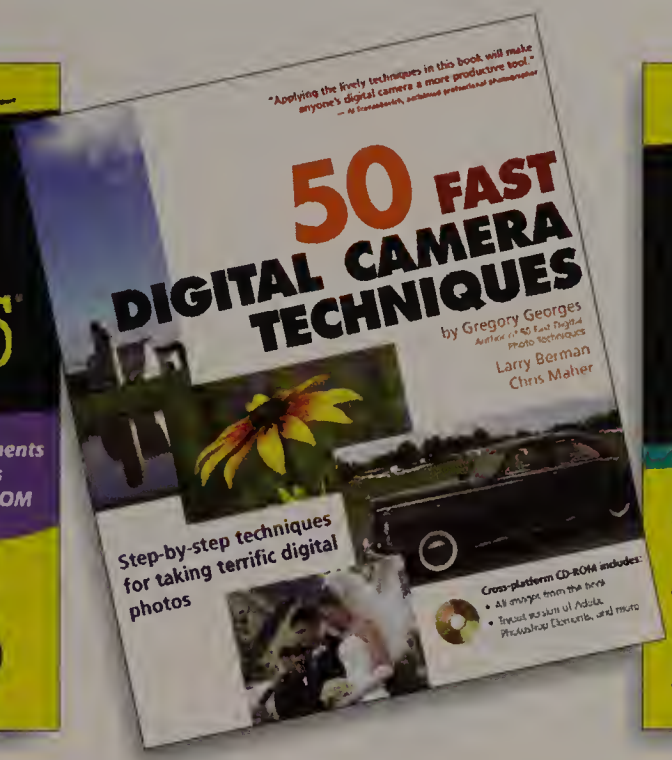


PC World, the PC World logo, eBay and the eBay logo are trademarks or registered trademarks of PC World Communications Inc. and eBay, Inc., respectively. All rights reserved. All other trademarks are the property of their respective owners.

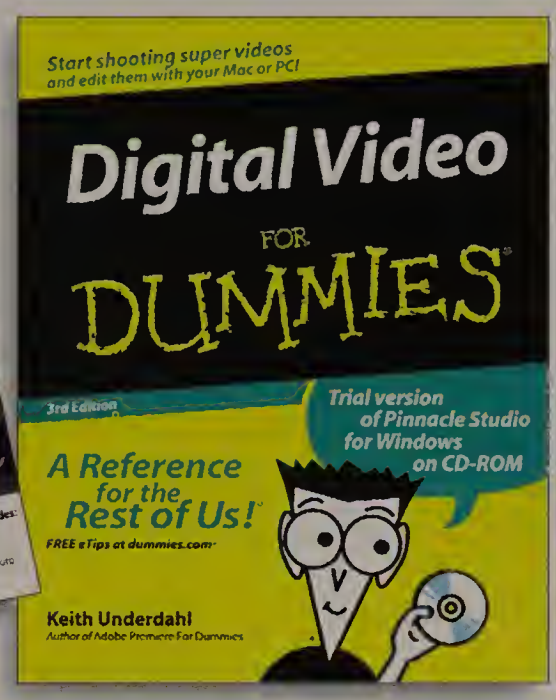
How to play with your new toy.



0-7645-1664-7

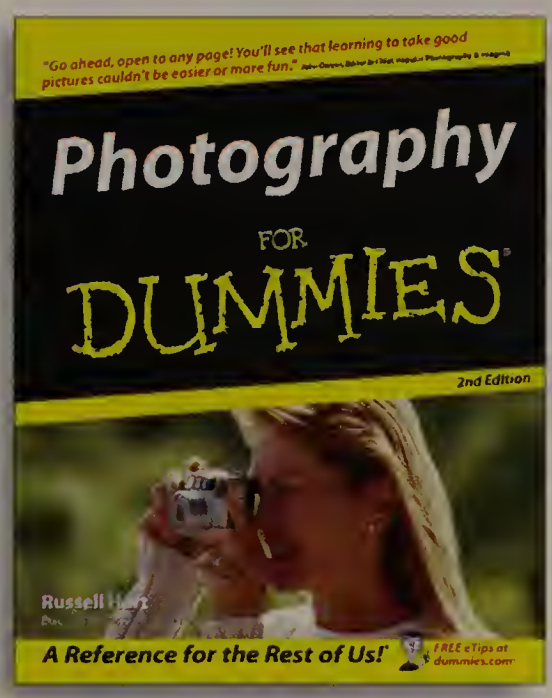


0-7645-2500-X



0-7645-4114-5

0-7645-5894-3



0-7645-4116-1

0-7645-6984-8

WILEY

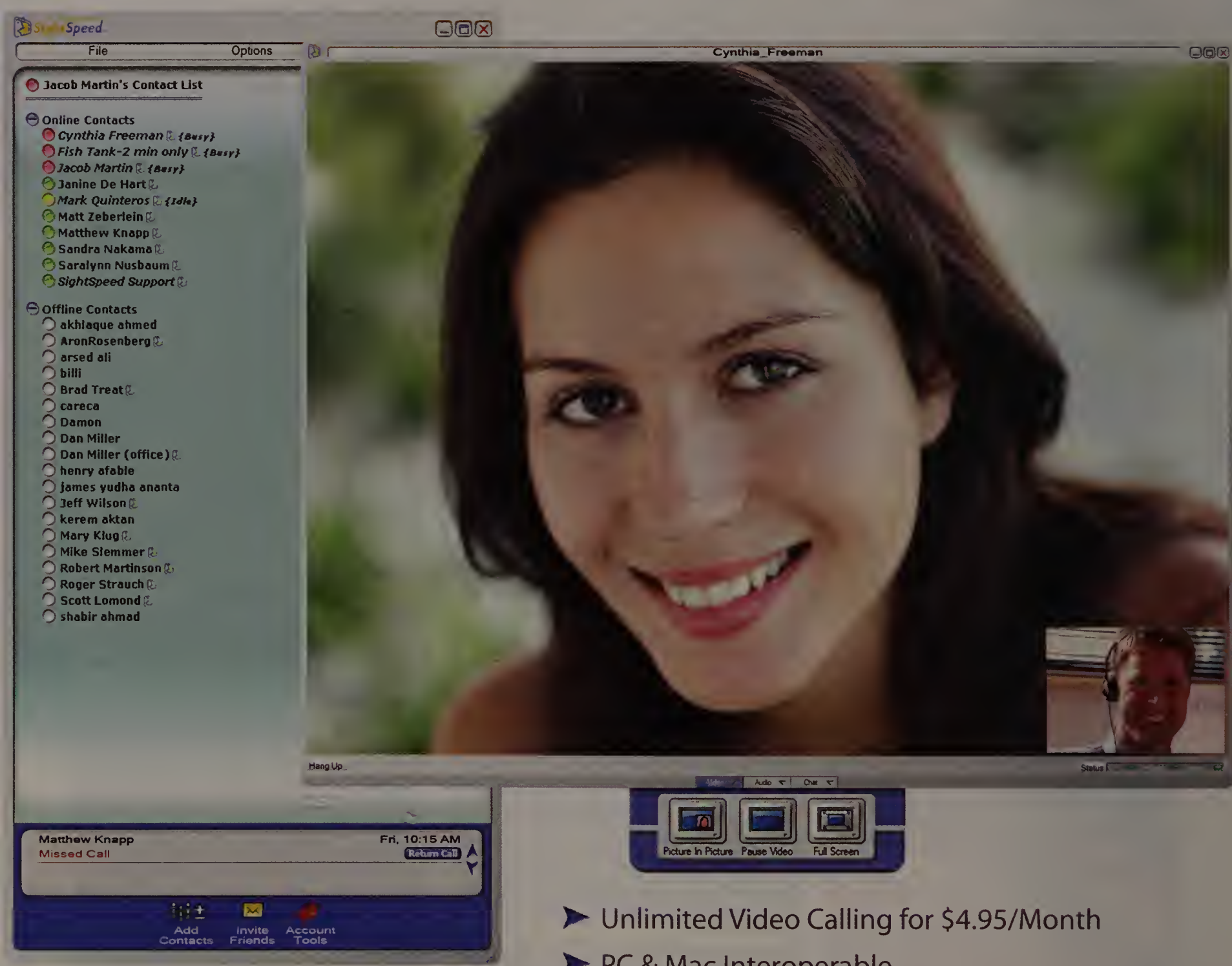
Now you know.

wiley.com

Wiley, the Wiley logo, For Dummies, the Dummies Man logo, and related trademarks and trade dress are trademarks or registered trademarks of JohnWiley & Sons, Inc. and/or its affiliates. All other trademarks are the property of their respective owners.

Experience what *PC World* hails as one of the world's best products...

SightSpeed Video Messenger



- Unlimited Video Calling for $4.95/Month
- PC & Mac Interoperable
- 30 Frames/Second Video
- Perfectly Synced Audio

SightSpeed
Video Messenger
July 2004

Free trial available at **SightSpeedMessenger.com**

Take-Out TV

Portable video players let you watch your favorite television shows and DVDs wherever you want. BY JAMES A. MARTIN

IN JUST ONE AFTERNOON, I watched *Shampoo* while getting my hair cut, *The Amazing Race* while running on a treadmill, and *The Swan* while sitting beside a lake. Why? Because I could, thanks to the Archos AV400, the first of a slew of new portable video players.

Typically weighing less than a pound, with small high-resolution color screens (the AV400 I used had a 3.8-inch screen), stereo sound, and a hard drive big enough for storing video, PVPs have a cool quotient that's off the charts. You can record this morning's *Today* show, Quentin Tarantino's entire film oeuvre and video of your Vegas vacation for viewing anywhere you go, anytime you want. Correction: Airline pilots and neurosurgeons, make that *almost* anytime.

PVPs can also store and play digital music and photos and back up data from a PC. In short, a PVP can be your home-away-from-home entertainment center.

Two years after the first model debuted, PVPs are arriving en masse this fall. Intel and Microsoft are supplying the processor and operating system/player software, respectively, for other devices called Portable Media Centers. PMCs will be available this fall from Creative Labs, IRiver, Samsung, Sanyo, ViewSonic, and others. The Archos AV400 uses its own operating system, though the company says its future PVPs will also support Microsoft's operating system for PMCs. Many companies will be offering them, but the picture's not clear whether we'll all ditch our MP3 players for PVPs.

COPY DVDs—LEGALLY

I SPENT SEVERAL DAYS romping around town with the Archos AV400, showing it off to friends and colleagues. All agreed: It's one sexy little gadget, and even its price tag ($550 for the 20GB version, which stores up to 80 hours of video) didn't diminish their ardor.

Aside from the AV400's surface appeal, it has an easy-to-use interface, a gorgeous color screen, and rich sound (though it distorted a bit at its highest volume setting). You can capture high-quality video using the S-Video or composite ports on a VCR, satellite/cable converter, or TV—you can even program the device to ▶

Jim's Travel Log

Cool Hot Spot I love to snorkel. And I'm hooked on Google. So Rosewood's Little Dix Bay sounds like paradise to me. At this Virgin Islands resort, guests can Google *and* snorkel (not at the same time), because it's the first Caribbean property to offer wireless Internet access on its beach, according to a resort spokesperson. Access is $20 a day, on top of high-season daily rates from $450—and even more damage if you spill a piña colada on your laptop, so be careful. Check it out at www.littledixbay.com.

Lost in Translation? *Ja, nein,* and *Marlene Dietrich* are the only German words I know. So on a trip to Berlin this fall, I'm hoping for help from Aim High's Talking TR-2203 ($199), a handheld audible language translator. Presumably, I should be able to type in a phrase like "That's disgusting!" and out of the device's speaker will come a voice saying "Das ist ja ekelhaft!" (The TR-2203 also speaks nine other languages.) I'll let you know how it goes in the next issue of *Digital World*. See the device at dwfind.com/43880.

PHOTOGRAPH: LORI EANES; ILLUSTRATION: ZACH TRENHOLM

record shows while you're away. Or you can connect it to your PC or Mac (via USB 2.0) to transfer MPEG video and other files for later playback.

The device also connects easily to your TV for big-screen playback via a docking cradle. The quality of video played back on my TV seemed nearly as good as the source material; shows looked just a little fuzzier than in the original broadcasts.

Unlike the Portable Media Centers, the AV400 can also record encrypted, commercial DVDs and VHS tapes. Going on a long trip? Just copy your favorite DVDs onto the AV400.

However, you can't transfer video files made from encrypted content to your computer, and you can't display them on your TV set—obvious copyright protections on Archos's part. You can view protected content only on the AV400's 3.8-inch screen. That's a shame, because watching a wide-screen, letter-boxed DVD movie like *Blade Runner* on the AV400's display is like listening to William Shatner sing *Lucy in the Sky With Diamonds*—the novelty wears off quickly.

Portable Media Centers will have even more restrictions than the current AV400. Unlike the Archos device, for instance, PMCs won't be able to record directly from traditional video sources such as a cable converter box. Instead, all content on a PMC must originate on a PC (but again, you can't import DVDs). That means you must first record the latest *Reno 911!* on your Windows Media Center PC or Windows XP computer with a TV tuner, then transfer it to the PMC. At least the transfer should be quick: Microsoft specifies a USB 2.0 connection for all PMCs. You're supposed to be able to connect a PMC to your TV for video playback, too.

As for movies, Microsoft has a partnership with CinemaNow, a fee-based online service that provides downloadable video files especially formatted for viewing on PMCs. (See "Video to Go" for more about video download sites.) But camcorder footage and other video content must be stored as Windows Media Video (WMV), the format required for viewing on a PMC. For now, only the new Windows Media Player 10 on the PC can convert files to PMC-friendly WMV.

SO MANY SIMPSONS, SO LITTLE TIME

GIVEN THE MUSIC industry's claims of huge losses from illegal digital-music file sharing, it was reasonable to expect this new generation of handheld multimedia players to be fortified with strong copyright protection (the AV400's surprisingly loose restrictions notwithstanding). Still, if you're used to converting audio CDs into MP3 files for listening on the go, the restrictions on PVPs—and on PMCs in particular—will take some getting used to.

With prices ranging from $400 to $800, PVPs are pricey, too. And let's be real: Watching video on a tiny PVP screen pales in comparison to watching a DVD movie on a laptop or a portable DVD player.

Then again, life is short, the list of great *Simpsons* episodes is long, and the easy portability of a PVP can provide a viable solution to that existential dilemma. I like the AV400: While most companies are now introducing their first PVPs, the AV400 is Archos's third-generation device. The company's had time to figure this PVP thing out, and it shows.

If you can wait, hey, even better. Prices are bound to fall as more PVPs debut. And as of this writing, it remains to be seen how PMCs will stack up against the AV400 in terms of video and audio quality. But for a true, gotta-have-it-now gadget freak, the concept of waiting is as ridiculous as, well, not watching *Shampoo* while getting a haircut. ■

TINY FLAT-SCREEN TV: The AV400's 3.8-inch LCD screen displays surprisingly sharp video.

James A. Martin writes PC World's *Mobile Computing newsletter.*

VIDEO TO GO

THE FILM *The Endless Summer* helped document the 1960s surfing craze. Now, nearly 40 years later, Internet video-on-demand service CinemaNow (www.cinemanow.com) hopes that this classic documentary—and other movies—will ignite a craze for Microsoft-based Portable Media Centers (PMCs).

By early fall CinemaNow plans to offer *The Endless Summer* (it's all good, dude) and about 500 other downloadable videos especially formatted for viewing on a PMC's screen. CinemaNow claims a catalog of some 2000 video titles.

The PMC-formatted videos, which will include recent and classic films, are available either to rent (meaning the file you download can be accessed only for a specific length of time, usually 24 hours) or on a "download-to-own" basis, providing unlimited play. Rates vary by title. Expect to pay about $4 to rent, $15 to own.

For the time being, CinemaNow's Internet video-on-demand competitor, Movielink (www.movielink.com), doesn't offer titles especially formatted for viewing on PMCs.

PHOTOGRAPH: BARRY MUNIZ; ILLUSTRATION: DIEGO AGUIRRE

World's smallest/lightest high-resolution camcorder and camera **combination!**

FISHER MULTIMEDIA

One Camera, Twice The Enjoyment...

Plus, it's easy editing with the Fisher High-Resolution Digital Pocket CameraCorder™

Take DVD-like quality digital video. Take 3.2 mega-pixel digital still pictures. Or take booth at once! The Fisher CameraCorder™ is an all-in-one marvel (just 5.4 ounces) that has its own high-performance movie making and still picture software. Use the memory card in your PC or Mac or through the camera/docking station to connect to the USB port for fast downloading. Edit video or still material for transfer to DVD, video CD disc or email attachment.

New MPEG-4 technology optimizes the storage capacity for DVD-like quality video (30 frames/sec.). The Fisher CameraCorder™, which includes a 512-megabyte card, can store 1/2 hour of DVD-like video or over 3,900 photos.

Take it anywhere and be ready for any video/photo opportunity.

The Revolutionary Fisher CameraCorder™ is engineered by SANYO, one of the world's foremost digital imaging R & D sources.

www.fisherav.com

amazon.com and you're done. The Apple Store ULTIMATE ELECTRONICS

SANYO

Digital World

TECHNOLOGY THAT POWERS YOUR LIFE

Be a Digital Insider. Get a shot at a cool 30-inch flat-screen TV.

BenQ

www.benq.com

ENTER HERE TO WIN: www.digital-world.com/survey

Now that you're reading the first issue of *Digital World*, be one of the first to tell us what you think about this publication and digital electronics products in general. You'll help us create a better *Digital World*—and you'll get a chance to win the latest LCD TV from BenQ, the HDTV-compatible DV3080. You need submit only one entry to qualify, and you can enter through October 29, 2004.

You'll also get a chance to sign up for our twice-monthly e-mail newsletter about the whole new universe of digital products for your life.

SURVEY DETAILS: Your privacy is important to us. We will not share your data with third parties for any reason. The prize drawing is open to all legal U.S. and Canadian residents (except those in Quebec and Puerto Rico), age 18 or older. Visit the survey site to view the complete drawing rules, including alternate methods of entry into the prize drawing.

The Price Is Right—or Fixed?

A little talked-about business practice, called minimum advertised price, can have a big impact on the amount you pay for consumer electronics items. BY ROBERTA FURGER

HAVE YOU EVER WONDERED why online consumer electronics retailers—from Amazon to Crutchfield to Circuit City—sometimes seem to go out of their way to hide their prices? You may have to load items into a virtual shopping cart or send an e-mail query to learn a purchase price. Even when you don't play the shopping-cart game, you'll often see the same price everywhere you look.

The reason is a little-known practice called minimum advertised price, or MAP. Just about every consumer electronics maker has a MAP program. Vendors subsidize retailers' ad budgets in exchange for the retailers' agreeing not to advertise the manufacturers' products below a set price.

So what's in it for the vendors? Control. They control the retail channel (price wars can force retailers out of business and damage companies' distribution channels). They control the perceived value of their products. And they control prices without violating antitrust laws. "Restricting advertising prices can be as effective as restricting the sales price of a product," says Federal Trade Commission attorney William Lanning.

PLAYING BY THE RULES

NONE OF the manufacturers or big consumer electronics chains I contacted would comment on MAP—or on anything else having to do with pricing. Smaller Internet retailers, on the other hand, weren't quite so tight-lipped.

"Everyone plays by the same rules," explains Mike Abt, president of AbtElectronics.com. Through regular correspondence, manufacturers inform Abt (and his competitors) when they're about to lower the MAP on products. Computer products typically go off MAP about four months after they've been introduced, he says. TVs, however, may be constrained by MAP programs for as long as a year.

For Abt, MAP is just one of the rules he lives by in order to maintain a healthy relationship with his vendors. Retailers who violate MAP programs not only run the risk of losing their co-op funds, they also risk getting new products later than other vendors and, ultimately, jeopardizing the store's "authorized dealer" status.

Other companies take a less philosophical view of these programs. Digital Pro Audio (www.digitalproaudio.com), for instance, is among a number of Web retailers waging a war on MAP. The company devotes an entire page on its site to a discussion of how MAP programs affect its pricing. "We want to go on record as being opposed to MAP in general," the company writes. "We feel that it is only benefiting the large chain stores or online superstores while hurting the smaller service and price-oriented retailers (like us) and prohibiting customers from getting the best deal they can."

SHOPPING CART HASSLE

DO MAP PROGRAMS interfere with a Web retailer's ability to set its own prices, or do they just make comparison-shopping inconvenient? The FTC has yet to answer that question, but it's one that Tim Johnson, an attorney with the Minneapolis firm of Fredrikson & Byron, hopes will be clarified sooner rather than later.

"It's hard to say that consumers are being seriously harmed by these programs," says Johnson. "It's probably more of an inconvenience." But if the shopping cart hassle were the only issue, the practice wouldn't be getting so much attention.

FTC attorneys say they're monitoring MAP programs. "We're aware of manufacturers' MAP policies, and we're following the issue," explains the FTC's Lanning.

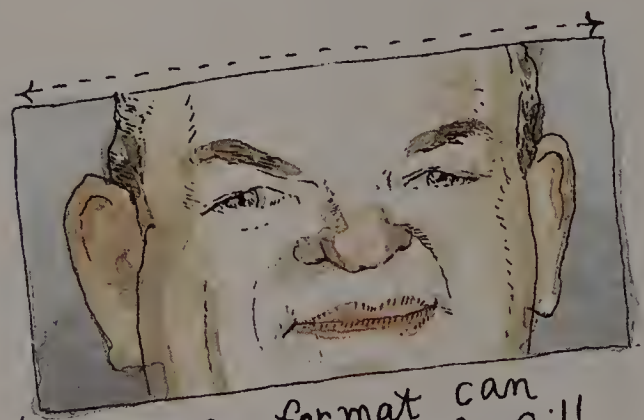
While retailers and manufacturers play cat-and-mouse games with pricing and the FTC watches, consumers have little choice but to go along. Nothing I've uncovered proves that MAP programs increase the price you pay for goods—but they may prevent items from being sold for too little. One thing's for sure: Prices aren't always what they seem. ■

Roberta Furger writes and shops online from her home in Oakland, California.

ILLUSTRATION: GENE GREIF

HDTV

Pro



Wide-screen format can accommodate most of Bill O'Reilly's swelled head

Televised hockey suddenly somewhat decipherable

Bland, dreary network drivel now cool-looking

Less reason to venture into the dangerous outdoors

Con

TV appearances by Joan Rivers would be like having her in your living room

It will still take an hour to watch "60 Minutes"

Sharper picture makes it harder to conceal middle age in Aerosmith videos

Only paves the way for even more expensive 3DHDTV

ILLUSTRATION: BARRY BLITT

The leader in reliable CD, DVD, and digital video solutions

Sure, you may hold the remote, but who's really in control here? Well if you're still watching TV on its terms, the answer's not you. But the ConvertX PVR, model PX-TV402U, gives you real control over your TV. Because the PX-TV402U gives you the power to watch, pause and record live TV—on your PC. Plus you can schedule shows to record while you're away. Take your pick between DivX®, MPEG-4, MPEG-2 and MPEG-1 recording formats. And when you see something you want to keep, you can edit and burn it to CD or DVD.

And you're not limited to TV. The PX-TV402U also lets you capture video from camcorders, VCRs and DVD players, in case you get tired of showing your TV who's boss.

To learn more about how to really take control of your TV, call us at 1.800.886.3935.
Or go to **www.plextor.com**

Stop watching TV, start controlling it!

©2004 Plextor, Corp. All rights reserved. Plextor and the Plextor logo are registered trademarks of Plextor, Corp. Doc Cntrl F112.2

The Best seat in the house.

A TRUE VISUAL EXPERIENCE

Digital True View™

17" F773 LCD

Introducing the newest CTX series of LCDs.

The 17" F773 LCD features our new ***Digital True View™*** technology. This new panel technology drastically increases sharpness of the picture and enhances contrast and brightness of the image, creating a more comfortable visual environment. The F773 is designed to meet even your most demanding needs with its 400 nits of brightness, dual DVI and VGA inputs, 500:1 contrast ratio, and a fast 16ms response time.

Specifications

17" F Series (F773)	TV Studio Xtra (MT001)	TV Box Xtra (MT002)
- Digital True View™	- Personal Video Recorder	- External Box
- 400 nits brightness	- Instant Replay	- Plug and Play
- 16ms response time	- MPEG Encoder	- Watch TV on your LCD/CRT
- Speakers	- Direct Burn	- PIP Function
- DVI/VGA inputs	- FM Radio	- Remote Control
	- Stereo / PIP	

$30 REBATE

Now you can enjoy watching TV on your LCD!

Purchase a CTX TV Studio Xtra PCI TV Tuner or TV Box Xtra with a CTX 17" F773 LCD and you will receive a $30 mail-in rebate.
For rebate details, please log onto www.ctxtec.com/XtraRebate

- **CTX new TV Studio Xtra** PCI TV Tuner offers instant conversion of a LCD monitor or any VGA-compatible PC monitor to a multimedia television that you can watch, record and edit
- **CTX new TV Box Xtra** external box offers 1280x1024 High Resolution, turning any LCD or CRT monitor into a TV with or without a PC

CTX®

COMMITTED TO XCELLENCE™

Call Now (877) 893-6886 or visit us at www.ctxtec.com

> LCD DISPLAYS > CRT DISPLAYS > PROJECTORS > MULTIMEDIA DISPLAYS > CONSUMER ELECTRONICS

Computers 4sure.com (800) COMPUTER | amazon.com | CDW (800) 830-4239 | Insight (800) INSIGHT | newegg.com (800) 390-1119 | PC Connection (888) 213-0260 | PC Mall (800) 555-MALL